



CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

ON THE

Sanitary Condition of the City

DURING THE YEAR

1920.



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SANITARY COMMITTEE.

Alderman C. T. STABLEFORTH, J.P., Chairman.

Councillor DAVID ADAMS, J.P., Vice-Chairman.

The Lord Mayor (Councillor WALTER LEE, J.P.)

Alderman ADAM WILSON, J.P., F.R.C.S.

„ G. G. ARCHIBALD.

„ J. R. MASON, L.R.C.P.

„ ALEX. WILKIE, C.H., J.P., M.P.

Councillor THOS. MATTHEWSON, M.B.E. Councillor ADAM TINDALL.

„ W. E. HARKER, J.P.

„ JNO. BARKER.

„ WM. BECKETT.

„ GEO. DIXON.

„ JAS. SMITH.

„ J. G. SMITH, J.P.

„ JOHN GRANTHAM.

„ H. BENSON, J.P.

„ J. W. TELFORD.

„ J. C. DOYLE.

„ G. D. NEWTON, L.R.C.P.

„ E. CHARLTON.

„ J. MOORE, J.P.

„ R. W. SIMPSON,

„ C. PILLAR.

M.B. Ch.B.

„ W. V. LONGFIELD.

„ J. CAREY.

„ W. O. WEDDLE.

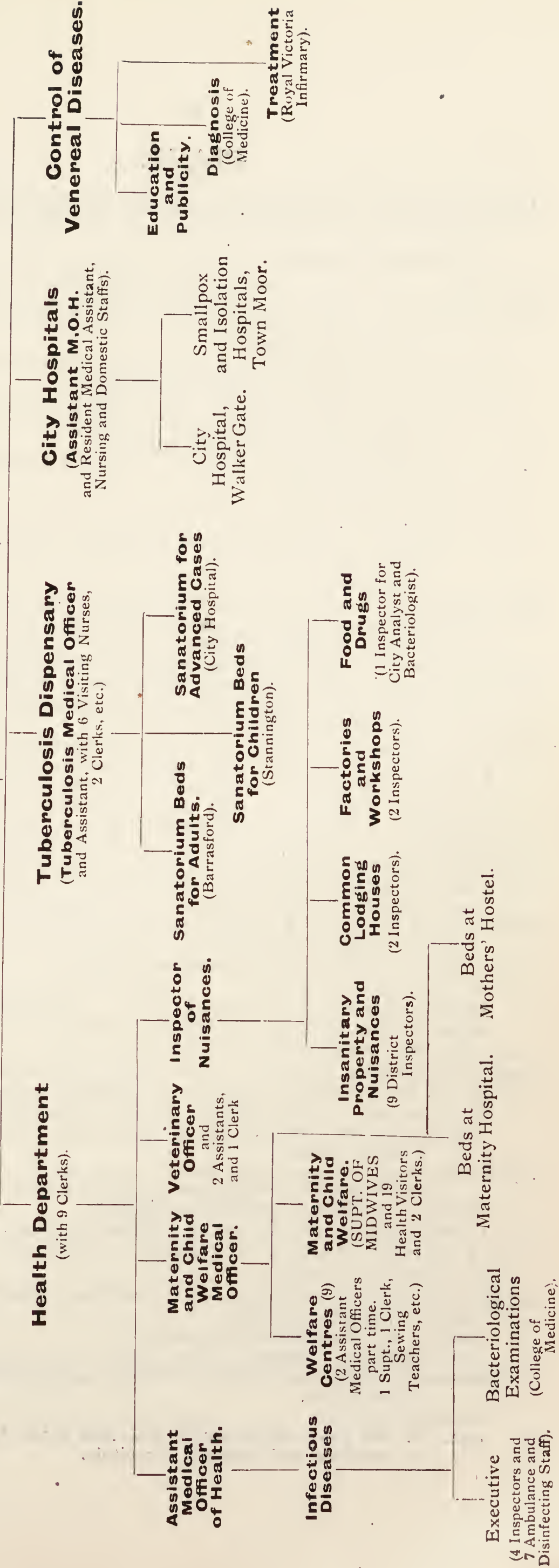
„ W. R. WALLACE.

„ JOHN CHAPMAN, J.P.

„ J. BARTLETT.

TABLE SHEWING THE VARIOUS SECTIONS OF THE SANITARY COMMITTEE'S WORK WHICH IS UNDER THE DIRECT CHARGE OF THE MEDICAL OFFICER OF HEALTH.

Medical Officer of Health.



STAFF.

HAROLD KERR, O.B.E., M.D., D.P.H., Medical Officer of Health and Medical Superintendent of the City Hospitals for Infectious Diseases.

S. J. Clegg, O.B.E., M.D., D.P.H. (Deputy Medical Officer of Health).

Wm. Hudspeth, Inspector of Nuisances, and Chief Sanitary Inspector.

CHRIS. RAIMES, Chief Assistant Inspector of Nuisances and Assistant Workshops Inspector.

WM. CATTLIFF, Assistant Inspector under the Food and Drugs Acts.

ISAAC CLARK, Assistant Workshops Inspector.

E. W. SCOTT, JAS. McNICHOL, JAS. HUNTER, GEO. HARDIE, W. F. BACON, JAS. McKENDRY, RICHARD REDPATH, ADAM FLOCKHART, L. W. JOHNSON, District Inspectors.

ARTHUR ROWE, THOMAS HESLOP, Assistant Inspectors of Common Lodging Houses.

WM. BEAN, WM. GRAY, W. E. PERKINS, C. R. CRAIG, Infectious Disease Inspectors.

JAS. ROBSON, JAS. BRUCE, JNO. R. CRAGIE, J. W. ROBSON, T. W. WHELANS, THOS. MOORE, JOS. ROBSON, Ambulance Drivers and Disinfectors.

Wm. Gillender, WM. MILNE, *GEO. CUTHBERTSON, *ALFRED HEDLEY, M.S.M., *ALEC M. WALKER, JOS. GILHESPY, WM. COCKBURN, TAYLOR RICHARDSON, IVY GOODHALL (Typist), Clerks in the Health Department.

(Those marked * hold the Sanitary Inspectors Certificate of the Royal Sanitary Institute).

Thos. Parker, F.R.C.V.S., Veterinary Officer and Inspector of Provisions.

THOS. DODDS, JAS. M. ANDERSON, Assistant Inspectors of Provisions.

NORMAN DICKSON, Clerk.

A. F. G. Spinks, M.D., Maternity and Child Welfare Medical Officer.

a GEORGINA B. CAMERON, Chief Health Visitor and Supt. of Midwives.

b DOROTHY STRONG, **c** CATHERINE M. THEXTON, **d** MARY LEVINE,

f MARIAN MOODY, **e** LIZZIE ISA. PRITCHARD, **d** LOUISE SHELL,

g MAISIE L. HOPPER, **g** FLORENCE MARTHA HATFIELD, **e** JEANNIE

GONZALEZ, **f** MATILDA WALLACE, **c** MATTIE D. HALLIDAY, **g** THOMASINA

TYZACK, **g** ISABELLA McKINLAY, **g** HILDA BLAIR, **f** HANNAH CHARLTON,

c MARY WIGHAM, **f** J. N. MARCHBANK, **h** M. I. DUNN, **f** K. M. NICHOLAS,

Health Visitors; **EDITH RODGERS, ANNIE McLEOD,** Clerks.

(Qualifications of those marked **a** C.M.B., General and Fever Nursing and R.S.I. Certificates.

f C.M.B., General Nursing and R.S.I. **c** C.M.B., General Nursing and Fever

d C.M.B., and R.S.I. **g** C.M.B., and General Nursing. **e** C.M.B. **b** R.S.I.

h General and Fever Nursing and Rotunda Certificates).

H. GLEN DAVISON, M.D.

MABEL CAMPBELL, M.B., CH.B.

} Assistant Medical Officers (part time),

} Welfare Centres.

ANNIE G. BAINBRIDGE, Superintendent of Welfare Centres.

ANNIE RODGERS, Clerk.

Wm. H. Dickinson, O.B.E., M.B., CH.B., D.P.H., Tuberculosis Medical Officer.

ALLAN WOTHERSPOON, M.B., CH.B., Assistant Medical Officer.

a MARGARET L. HUTCHINSON, **b** OLIVE SIMPSON, **c** CONSTANCE M.

BAYNE, **d** ANNIE BOOTH, **a** M. E. JACK, **a** W. KINNAIRD, Tuberculosis

Visiting Nurses.

(Qualifications of those marked **a** General Nursing. **b** General and Fever Nursing. **c** Health Visitors and School Nurses Certificates of R.S.I. **d** Fever Nursing).

RALPH T. MORRISON, Assistant Inspector.

GEORGE MAGNAY and WINIFRED MCGILLAN, Clerks.

T. N. V. Potts, M.B., B.S., D.P.H., Resident Medical Assistant, City Hospitals for Infectious Diseases.

H. E. Cook, Matron, City Hospitals for Infectious Diseases.

Sisters, Nurses, Servants.

HELENA N. HARRINGTON, Dispenser.

JAS. COCKBURN, Engineer, **GEO. COCKBURN,** Assistant Engineer.

HERBERT BLACKTIN, FRANK HARRINGTON, Lodge Keepers, City Hospital, Walker Gate.

Firemen; Porters.

JOS. W. and JANE STEPHENSON, JAS. and MARY GREGAN, Caretakers at Smallpox and Isolation Hospitals.

*To Alderman CHARLES T. STABLEFORTH,
J.P., Chairman of the Sanitary Committee
of the Corporation of Newcastle-upon-Tyne.*

SIR,

The Report upon the health of the City in 1920 is one of the most satisfactory that has yet appeared. Dealing with a year in which social conditions were on the whole more settled and satisfactory than in its predecessor, the necessities of life more plentiful, and employment generally good, it was, however, the last of the years of what may be described as a period of pseudo prosperity contingent upon the War, during which the nation had been living to some extent upon its capital.

The closing months brought definite signs of a decline in trade and industry; the index figure for the cost of living reached its maximum in November, being then 176 per cent. above that for July, 1914. Shortage of ready money soon began to make its effect felt in various trades, and prices commenced to fall somewhat, though not sufficiently by the close of the year to make any appreciable difference to the man in the street.

The **General Death Rate** is again somewhat above the average for the country and for the 96 great towns, and there is little doubt that the relatively high overcrowding in Newcastle is responsible for this. Of the large towns in the North East, Newcastle has substantially the lowest death rate.

The year under report was not marked by an excess of any particular epidemic disease. While **Smallpox** and **Typhus** were entirely absent, and **Enteric Fever** practically non-existent, **Diarrhœa**, **Diphtheria**, **Scarlet Fever**, **Measles**, and **Tuberculosis** were responsible for the lowest rates that the City has known in recent years, and in some cases, ever.

Diseases of the **Nervous System** claimed fewer victims than in any year during the last decade. The number of deaths from **Physical Overstrain** (circulatory system) is rather higher than usual, from **Respiratory Diseases** lower, and from **Digestive Diseases** much about the average for the last five years. Deaths from **Cancer** number 244, as against 312 last year. With the exception of 1918 (225), this is the lowest mortality since 1907. Approximately 1 in 20 deaths in Newcastle are due to Cancer, whereas Consumption (Tuberculosis "all forms") still kills 1 in 10, in spite of the steady progress that has been made in fighting it.

The Registrar-General estimates the **Population** at the middle of the year as 286,061, and the population for the calculation of the birth rate is estimated at 287,255.

The number of **Marriages** in the City during the year was 3,036, as compared with 2,985 in 1919, 2,544 in 1918, 2,389 in 1917, and 2,620 in 1916.

The **Birth Rate** was 28·0 per 1000 population, which is the highest since 1910, when it was 28·4.

The **Death Rate** from all causes was 14·0 as compared with 17·6 per 1,000 population in 1919, and 17·3 in 1918.

The *Natural Increase* of population (births minus deaths) amounted to 4,045.

The **Infantile Mortality Rate** was equivalent to 101 deaths under one year of age per 1,000 births, as compared with 120 in 1919, 107 in 1918, 113 in 1917, 123 in 1916, 133 in 1915, 137 in 1914, 122 in 1913, and 101 in 1912.

Of the total number of these deaths nearly one-half were due to conditions operating before birth, influences which, so far, all our efforts have failed to modify.

The outstanding feature of the Municipal Scheme for **Maternity and Child Welfare** was the taking over at the beginning of April by the Sanitary Committee of the 9 Centres of the Mothers' and Babies' Welcome Society. These have been conducted upon exactly similar lines, and there has been no break in continuity of activity. The institutional side of the scheme also includes the provision of 10 beds in the Maternity Hospital, and 10 beds in the Hostel for Unmarried Mothers, and the closest co-operation has continued between all these essential elements of a complete system, and with the other voluntary organisations, including the two valuable Day Nurseries in the East and West ends of the City.

A further notable advance was made by the appointment in June of a whole-time medical officer (DR. A. F. G. SPINKS) to take immediate charge of all the various undertakings of the Maternity and Child Welfare Scheme.

The distribution of dried milk by the department was continued, and during the year about 48 tons were distributed, of which 9 tons were given free, and the remainder at cost price, the utmost care being taken that the beneficiaries included the really needy and no others.

A difficulty that has particularly to be guarded against in this connection is the tendency for natural breast feeding to fall into abeyance in favour of the artificial, and it has to be constantly impressed upon the mothers that no matter how good it may be, no substitute for the breast can ever be nearly as satisfactory or as safe as the latter. Undoubtedly the use of dried milk has played a considerable part in the triumph over milk-borne epidemic, more particularly summer diarrhoea, but it can never be regarded as a substitute for nature's own provision when that is available.

With the staff now complete for the first year, it has been possible to deal with child welfare in a really satisfactory manner. More than three-fourths of the babies born in the City have been visited, and of all these, those requiring help and special care are re-visited at more or less frequent intervals, and such children followed up through the pre-school age, thus bridging

a gap that existed previously. Special attention has also been given to the care of children suffering from ophthalmia, measles, and pneumonia.

With the additional medical advice available, the attendance of mothers with their babies at the Welcomes increased enormously, and it became necessary to double the sessions, so that in place of one, two were held at each of the 9 centres weekly.

That this service is appreciated, in spite of the fact that its object is entirely preventive and not curative, no treatment being given, is abundantly evident, and proof of its value is seen in the results, which show that while the infant mortality rate for the whole City was equivalent to 101 deaths per 1,000 births, that among children attending the Welfare Centres was only 20·9.

Since the close of the year under report the economic situation has become more acute, and the Municipality, like everyone else, has been compelled to retrench considerably. Of the Sanitary Committee's undertakings, that which has suffered most severely has been the work for the preservation of infant life, and much of it has had to cease. In the present tensivity of the struggle for existence, each of us must judge for himself on the vexed problem of birth control, but it were folly indeed after the heavy losses during the Great War, if greater care were not to be taken of the children that are born. The argument anent the survival of the fittest as applied to infant mortality is utterly fallacious, as in a com-

munity where no special safeguards are adopted epidemic disease attacks the fit equally with the unfit, and only too frequently it is the less fit that proves the survivor. One must take into account further the enormous amount of permanent damage suffered by very many of those who do not actually succumb.

Infectious Diseases. There was a great diminution in the number of cases of **Measles** and **Rubella**, and only 2,727 notifications were received, as compared with 7,624 in the previous year.

There were 42 deaths, equivalent to a death rate of 0.15 per 1,000 population, one of the lowest recorded. The case mortality, 1.5 per cent., is decidedly low. Practically every case was visited by a Health Visitor as soon as notified, to ensure that the patient was receiving proper care and attention, to see that the doctor's orders were being observed, and to seek out unattended cases. There were 1,282 cases of **Scarlet Fever** of a mild type, with 20 deaths, and the death rate per 1,000 population of 0.07, is another very low figure. **Diphtheria** incidence also remained low, with 348 cases and 23 deaths, equivalent to a death rate per 1,000 population of 0.08, which is equal to the lowest recorded figure. **Whooping Cough** caused 45 deaths, and **Infantile Diarrhœa** caused 101 deaths in children under two years of age.

There were 10 cases of **Enteric Fever**, one of which died, while a second death was transferred from another district. This disease, which used to be of serious prevalence, is now an absolute rarity.

One death from suspected **Food Poisoning** occurred in July. Tinned salmon was thought to be the medium, but no evidence could be obtained, although *Bacillus Aertryche* Newport was isolated from post-mortem material.

Typhus made no appearance in the City during 1920. **Smallpox** also remained absent. With numerous small local outbreaks of the disease occurring in various parts of the country, and the lingering epidemic of 578 cases in Glasgow, the continued neglect of infantile vaccination is cause for ever-growing anxiety. Since 1908 there has been a steady diminution in the vaccination of babies in Newcastle. This is less noticeable here than in other places, but 1920 showed still another drop in the percentage of those obtaining protection, which is now below 74 per cent., although this is far in excess of the proportion in the neighbouring areas.

There were two cases of **Acute Poliomyelitis** notified, of which neither died, and there were 5 cases of Cerebro-Spinal Fever, all of which died.

Hospitals for Infectious Diseases.—1,710 fever patients, together with 167 cases of pulmonary consumption, were isolated at the *City Hospital, Walker Gate*. The fever case mortality for the Hospital was 4·8 per cent. The *Smallpox and Isolation Hospitals* were in use from January to July, 409 patients (scarlet fever convalescents) being admitted.

The *Disinfecting Stations* at Walker Gate and on the Moor dealt with 45,459 articles from the City and from the Hospitals themselves.

The **Tuberculosis** scheme has been continued under similar arrangements to those of the previous year. There was an increased number of notifications as compared with the last year or two, but with relatively fewer deaths, the death rate per 1,000 population being 1·71 for "all forms" of tuberculosis, as against 1·65 in the previous year. This is less than one half that for the year 1891 (3·52).

Although the new notifications are much about the same as in the previous year, since the average duration of illness is between 32 and 33 months it is obvious that there are always large numbers of patients remaining under observation from previous years. 800 new patients were entered on the Dispensary roll, and 213, or more than one quarter of these, were discovered by the Tuberculosis Medical Officer himself. Over 90 per cent. were insured persons, or their dependants, in about equal proportion, leaving something under 10 per cent. from the uninsured classes.

There were 12,170 attendances, by 2,482 individual patients, at the Dispensary, as against 10,332 in the previous year, the average attendance per patient being about 5. 13,923 domiciliary visits were paid by the nurses, of which 2,811 were to ex-service men. This constitutes the heaviest year's work undertaken by the staff.

Constant changes amongst the personnel (the Assistant Medical Officer and Nurses), throws much unnecessary routine work upon the Tuberculosis Medical Officer, DR. W. H. DICKINSON, in order to secure the necessary sequence and continuity and care of the patients. For this the unsettled conditions of employment during the year were to blame. Much valuable information has been accumulated, and there is probably no tuberculosis section in the country where such data are more carefully recorded and verified.

A striking feature of pulmonary tuberculosis in this area is its relatively heavy incidence upon males as compared with females, the former exceeding the latter by over 50 per cent. This is noticeable from the age of 15 upwards. Non-pulmonary varieties of the disease appear to affect the sexes about equally. Phthisis is more rapidly fatal in females than in males, the average duration of illness being 26 months for the former, as against 38 months for the latter.

Considerable laxity still exists in regard to notification of the disease, for out of a total of 837 deaths, 52 had not been notified at all during life, and the average period between the date of notification and the date of death was 13·8 months. It is obvious that if this can be regarded as indicating the period at which the disease is first discovered, the hope of cure is small.

The housing shortage hits no class more severely than the consumptive and the person susceptible to

consumption, and the truly appalling overcrowding that exists in many of the houses makes one almost despair of reducing the incidence of the deadly scourge, which at present accounts for one in every ten deaths. It is significant that although 78 patients, including many of the worst cases, were in institutions, there were still no less than 209 infective cases who had neither a separate room, nor yet even a separate bed. It is this state of affairs that renders futile so much of our effort to check and cure the disease, and so long as they continue, so long will the results of treatment of the disease in sanatoria and so forth, the only known means of arresting and curing it, be gravely prejudiced in so many of the unfortunates who have no other domestic prospect.

Organised systematic after-care is also required to help the returned sanatorium patient in such matters as the finding of suitable employment, obtaining necessary food and comforts, encouraging him to continue the habits and precautions he has learnt in the institution, and generally to help each individual to overcome the difficulties that are likely to prevent his retention of the health that he has regained.

The 45 beds at *Barrasford Sanatorium* for early cases of pulmonary tuberculosis in adults, and the 30 beds held by the Committee at *Stannington Sanatorium* for children were kept fully occupied. Of 995 patients treated in Corporation beds at Barrasford since the commencement of contract in 1908, at the end of 1920 there were 42 still in the institution,

300 well, working, or fit to work, 110 improved or moderately well, 29 relapsed, 383 dead, and 131 lost sight of. Of 50 Corporation patients who left Stannington in 1920, 31 were much improved, 11 improved, and 8 showed no improvement. 175 advanced cases were discharged from the *Sanatorium Pavilions, Walker Gate*, and 3 of these were fit for work, 71 were improved, 39 were without improvement, and 62 died in hospital. The great value of this institution lies in the prevention of the infection of other members of a household where the home conditions are not such as to permit of sufficient precautions being taken, and to some extent in the "patching up" of patients sufficiently to allow a proportion of them to return to work for a further period, and to the support of their families, until these are a stage nearer wage-earning age.

PROF. R. A. BOLAM, Chief Specialist Medical Officer at the Clinic, reports that the third year of work for diagnosis and treatment of **Venereal Disease** has been one of further development and progress. 2,819 persons from Newcastle attended 30,526 times at the out-patient clinic, and occupied beds in the wards for 1,145 days, as compared with 14,965 attendances by 1,239 persons at the out-patient Clinic, and 1,564 in-patient days in 1919. It is a sign of encouragement that the average out-patient attendances per individual have further increased from 12 to 14, probably owing to the use of the recently opened irrigation rooms.

There is no doubt, however, that a much better attendance is necessary before the working of the Clinic can be considered as thoroughly satisfactory, and this will not be obtained until a system of modified notification becomes compulsory, i.e., by the furnishing by the practitioner of personal particulars of his patient (name, address, etc.,) to the Medical Officer of Health only when the patient has ceased attending for treatment before cure can be regarded as fairly certain. The Medical Officer of Health would then be in a position to order resumption of attendance by the patient, failing which there should be some means of compulsion or penalty.

Private practitioners continue to take advantage of the opportunities for study and practical experience afforded at the Clinic. It would be a great gain for the Clinic itself, as permitting of greater opportunity for further necessary research into the nature and treatment of these diseases, if more of the treatment of cases could be devolved upon private practitioners in the City, an arrangement being made, for instance, for certain doctors to undertake treatment at so much per case or per session where the patient himself was unable to pay a fee. It would also be of considerable advantage to the City, in that facilities for obtaining treatment would be so much the more numerous and convenient of access.

Some arrangement for hostel accommodation for infected girls and unmarried mothers would also be a

great boon, as enabling many of those to obtain and continue treatment who are at present quite unable to do this.

Public education and propaganda have continued but with less intensity, since the enthusiasm of the various social bodies for addresses has waned somewhat, as the subject of venereal disease prevention is by no means a novelty to them now. A few addresses were given by the Medical Officer of Health.

The four police women have continued to do excellent work. Their service lies mainly in patrol duty, and in detective work in connection with charges of abortion, and the treatment of disease by unqualified persons.

The voluntary women patrols of the National Council of Women ceased their valuable services during the summer, after about six years continuous duty, and the City owes much to them for their quiet self-sacrificing work for the protection of women and girls in our public places.

Food and Provisions.—Bovine Tuberculosis.—174 samples of milk were examined for the presence of tubercle bacilli, which were found in 11, or 6·3 per cent. of them. This proportion is much higher than in the previous year, when it was only 3·6 per cent. Owing to the lack of legal power, and of an equal desire for action among the various Local Authorities concerned, there is still considerable difficulty in dealing with tuberculous milks.

The Veterinary Officer and Inspector of Provisions (MR. THOMAS PARKER, F.R.C.V.S.) reports that the City now contains 26 cow-keepers, occupying 40 cow-sheds, on 28 premises, with 565 milch cows, a further diminution of 29 cows since the previous year.

Inspection of the cow-sheds and dairies has not been as complete as it should be owing to the continued pressure of work in other directions, more particularly meat inspection. This is unfortunate, as much could be done by regular examination of the cows in the City byres to eliminate those yielding tuberculous milk and therefore extremely dangerous to young children.

The Sanitary Committee is well aware of the difficulties under which meat inspection is carried on in 103 separate premises situated in 15 different localities in the City, and how very largely the Veterinary Officer and his inspectors are dependent upon the good-will and integrity of the butchers for information as to carcasses found in process of slaughter to be "not right," the prompt routine inspection of every animal killed being utterly impossible. There can be no question, therefore, that in however capable hands the work of inspection may rest, it cannot be complete under such conditions.

Much was learned and much was gained in this respect by the centralisation of slaughtering during the period of Government Control. That, however, has now ceased, unfortunately for the efficiency of inspection.

During the year 1920, 1,229 animal carcasses, together with 50 tons of meat were condemned within the City and destroyed as unfit for human consumption. Of these, 187 carcasses were condemned on account of tuberculosis. During the previous year the respective figures were 2,150 carcasses and 4 tons of meat condemned, of which 274 carcasses were tuberculous.

It is cheering to report the resumption of the arrival of food-carrying vessels in the Tyne, 61 having come to the Quayside, as compared with 1 only in 1919. All imported articles were kept under supervision.

One general dealer was proceeded against and was fined £10 for depositing for sale a quantity of unsound hams.

During the year under report Mr. Parker was nominated a member of a Departmental Committee appointed by the Minister of Health to report upon the whole question of Meat Inspection, and was the only Veterinary Surgeon so selected. The Government has expressed its high appreciation of the services so rendered, which were of the greatest value.

Food and Adulteration Acts.—The Inspector under the Food and Drugs Acts (MR. WM. HUDSPETH) reports the taking of 1,263 samples for analysis, including 972 of milk.

Of the latter 467 were rough-tested in the Health Department, and appeared to be genuine, and of the remaining 796 the Public Analyst found 85 to be below the minimal limit fixed by the Sale of Milk Regulations, 1901.

Of the 291 samples of food and drugs other than milk, 11 were found to be not genuine.

42 cases were taken to Court, and a conviction was obtained in 31 of them, with fines aggregating £87, cautions were issued in respect of 33, and no proceedings were taken, for various reasons, in 21.

There were 11 offences other than adulteration, 6 of the offenders being summoned and convicted. The penalties in these instances totalled £3. The remaining 5 were cautioned.

In addition 174 samples were examined for evidence of excremental pollution, which was to be found to an undesirable degree in 94 (or 54 per cent).

In 184 samples of water examined for evidence of excremental pollution, 5 were classified by the Bacteriologist as satisfactory, 44 as doubtful, 115 as unsatisfactory, and 20 as bad.

In 1914 10·2 per cent. of the Milk samples were certified "not genuine," in 1915 9·3 per cent., in 1916 10·3 per cent., in 1917 11·0 per cent., in 1918 8·66 per cent., 1919 11·5 per cent., and in 1920 8·74 per cent. Tubercle bacilli were found in 6·7 per cent. in 1914, 5·8 per cent. in 1915, 8·7 per cent. in 1916, 3·1 per cent. in 1917, 2·9 per cent. in 1918, 3·6 per cent. in 1919, and 6·3 per cent. in 1920. Evidence of excessive excremental pollution was found in 23·2 per cent. in 1914, 35·0 per cent. in 1915, 41·5 per cent. in 1916, 51·4 per cent. in 1917, 66·8 per cent. in 1918, 52·0 per cent. in 1919, and

54 per cent. in 1920, indicating a still further deterioration in the precautions for safeguarding the cleanliness of the milk, by care and cooling at the farms and skilful handling in transit and delivery.

106 samples were also obtained for examination for the presence of actual "dirt." 10 of these or 9.4 per cent. contained sediment in excess of the standard which should be yielded by "clean" milk, namely, 2 parts of moist sediment per 100,000 of milk. One firm in the City is now retailing Grade "A" Certified Milk obtained from one farm, and of the samples examined (taken monthly) all have proved to be within the standard of bacterial content.

Until the Milk and Dairies Act comes into force, or some similar legal provision, it is almost hopeless to attempt to check the high proportion of polluted milk coming into the City. It is little wonder that the use of dried milk is extending, for there is no question that owing to its relative purity, and its low susceptibility to contamination it is a safer food for the young child, in humbler households at least, than the fresh article, preferable though that may be upon physiological grounds. Practically all the conditions in the present day transport of milk are thoroughly bad, and the responsibility for the condition of the article when it reaches the consumer lies just as much with the railway companies as with the producer and retailer.

There are 299 small general shops in which milk is sold. This represents a slight increase on 1919. In each case special precautions are insisted upon to prevent contamination.

The margarine warehouses, bakehouses, restaurant kitchens, fried fish shops, and ice-creameries were kept under supervision, and their cleanliness insisted upon.

During the period covered by this report the local Food Control Committee has continued to refer to the Medical Officer of Health all applicants for licence as manufacturers of, or dealers in, food for a certificate of suitability before granting the necessary permit. It is highly desirable that Local Authorities should continue to hold these or similar powers in the future, on account of the good results that have accrued since their first institution.

The House and the Workplace—Nuisance Abatement.—The Inspector of Nuisances (MR. WILLIAM HUDSPETH) reports that the excessive cost of labour and materials is still the prime factor in preventing necessary improvements from being carried out in the houses showing remediable defects. Many houses which by pre-war standards are quite unfit for human habitation are still occupied, and the shortage of alternative accommodation renders it impossible to close them out of hand.

It is felt that it will be some years before the building operations now in progress and contemplated

on the Walker and other estates will benefit the poorer class of people in whose dwellings the sanitary conditions, and overcrowding, are sadly in need of amelioration by the upward movement of those who can pay the higher rents. In spite of the difficulties referred to above 7,610 notices have been served, and in only 13 cases had legal proceedings to be resorted to.

The Cleansing and Scavenging services (under the City Engineer) have not yet returned to their pre-war scale owing to the high cost entailed, but in no case is refuse removal carried out at a greater interval than a week.

Slightly greater progress has been made in the conversion of dry closets to the water carriage system, 36 pail closets and 24 cell privies having been removed during the year, together with 35 dry ashpits.

There are still, however, 4,827 of these abominations in the City, and it is still the cost of conversion which stands in the way of further sanitary progress being made in this direction.

Atmospheric Pollution, as measured at the observation station in Davison's yard, City Road, amounted to a deposit, in that part of the town, at the rate of 16·6 cwt. of solid impurity per acre per annum, or 529 tons per square mile.

700 observations were made of 90 chimneys, and 17 of them showed excessive output of black smoke on 34 occasions. There were no prosecutions undertaken, but

a steady improvement occurred as the result of the strongly expressed warnings of the Committee. The gradual substitution of gas or electricity for the dirty and wasteful soft coal fire in the domestic grate is all to the advantage of the public health and economy.

Housing.—At the end of the year 297 houses were contracted for or in course of erection on the Walker Estate, and a further seven were occupied. In addition to the foregoing 14 self contained houses and 46 tenements were built. It may be noted that these are the first houses built in the City during the last five years.

In November, 1920, the City Engineer's census shewed only 43 empty houses in the City as against 244 in August 1914 and 1,305 at the end of 1912. Overcrowding is the rule, and sub-letting is on the increase everywhere. There is no means of controlling this last, and the exploitation of the unfortunate tenants of so-called "furnished lodgings" constitutes an absolute scandal.

As usual the more severely congested wards showed the highest morbidity. In 1920 the general death rate was 19·3 per 1,000 population in All Saints' Ward, while in Dene and Jesmond Wards respectively it was 9·4 and 9·1. In St. Nicholas and St. Andrew's Wards the death rate from tuberculosis was 3·99 and 2·35, while in Jesmond it was 0·68 per 1,000 population.

In St. John's Ward 148 babies under 1 year of age died to every 1,000 born, in Stephenson Ward 124, and

121 in Benwell, whereas in Dene and Heaton the rates were only 36 and 55 respectively.

Over a period of 13 years the deaths of infants per 1,000 births in one room, two room, and three room houses have been respectively 156, 129, and 113.

Accommodation in the common lodging houses continues to be ample, although there are 5 less registered than there were in 1919.

Factories and Workshops, Offices, Places of Amusement, and Schools.—7,539 inspections of factories and workshops have been made, and 469 notices to remedy defects were served. The homes of outworkers were also kept under observation.

Particular attention has been given by the Inspector of Nuisances and his assistants to Theatres and Cinemas, with special regard to cleanliness, ventilation, and sanitary accommodation. A number of the larger and newer houses are admirably equipped with ventilating plant, but this is not always managed and controlled as it should be. In many of the smaller and less fashionable places, the conditions are not satisfactory, and it has been necessary to bring pressure to bear on the management to effect improvement. Experience of the influence of crowded audiences in insufficiently ventilated halls during the recent influenza pandemic showed the importance of attention to these vital matters. Many improvements have been effected in this connection throughout the City.

12 samples of rag flock were obtained and submitted to the Public Analyst, and all were found to conform to the legal standard of cleanliness.

148 inspections were made at Council and other Schools. In 3 instances certain minor defects and other insanitary conditions in connection with the conveniences, etc., were noted and reported to the School Authorities, who had them remedied.

Staff.—The year of this report has been characterised by the general consolidation and stock-taking of the obligations of the department, with some re-arrangement of duties among the individual members of the Staff. The large increase in the work imposed upon the department by legislation has necessitated this, together with a certain amount of modification of routine.

Every member of the staff has “pulled his (or her) weight,” and it is a pleasure to be able to record appreciation of unfailing loyal assistance.

To yourself, Sir, and to the members of the Sanitary Committee, I would express my grateful acknowledgment of unfailing help and advice in times of difficulty.

I have the honour to be, Sir,

Your obedient servant,



M.D., D P.H.

Medical Officer of Health.

Health Department,
Town Hall,

Newcastle-upon-Tyne,
29th August, 1921.

CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

Health Report, 1920.

I. GENERAL.

MORTALITY TABLES, SOCIAL CONDITIONS,
CLIMATOLOGY, WATER SUPPLY, DISPOSAL OF REFUSE.



YEAR.	POPULATION.	BIRTH RATE.	GENERAL DEATH RATE.	INFANTILE MORTALITY (Deaths per 1,000 Births).	ZYMOTIC DEATH RATE.	DIARRHŒA (ALL AGES).		SMALLPOX.					TYPHUS.		ENTERIC FEVER.					DIPHTHERIA.					SCARLET FEVER.					ERYSIPELAS.					MEASLES.			WHOOPING COUGH.		PULVERULEA SEPTICÆMIA.		CANCER.		PHTHISIS.				TUBERCULOSIS. OTHER FORMS.				TOTAL.				YEAR.	
						Number of Deaths.	Death Rate per 1,000 Population.	Cases Notified.	Number of Deaths.	Case Mortality per cent.	Death Rate per 1,000 Population.	Attack Rate per 1,000 Population.	Cases Notified.	Number of Deaths.	Cases Notified.	Number of Deaths.	Case Mortality per cent.	Death Rate per 1,000 Population.	Attack Rate per 1,000 Population.	Cases Notified.	Number of Deaths.	Case Mortality per cent.	Death Rate per 1,000 Population.	Attack Rate per 1,000 Population.	Cases Notified.	Number of Deaths.	Case Mortality per cent.	Death Rate per 1,000 Population.	Attack Rate per 1,000 Population.	Cases Notified.	Number of Deaths.	Case Mortality per cent.	Death Rate per 1,000 Population.	Attack Rate per 1,000 Population.	Number of Deaths.	Death Rate per 1,000 Population.	Number of Cases Notified.	Number of Deaths.	Number of Deaths.	Death Rate per 1,000 Population.	Cases Notified.	Number of Deaths.	Death Rate per 1,000 Population.	Attack Rate per 1,000 Population.	Cases Notified.	Number of Deaths.	Death Rate per 1,000 Population.	Attack Rate per 1,000 Population.									
1883	153,756	35·6	24·7	168	4·1	105	0·68	493	60	12·2	0·39	3·2	96	24	216	42	19·4	0·27	1·41	29	11	37·9	0·07	0·19	1,152	124	10·8	0·81	7·5	NOT NOTIFIABLE.	?	...	?	...	...	209	1·36	51	0·33	7	1	?	?	...	?	?	...	...	?	?	...	...	?	?	...	...	1883
1884	157,567	38·5	22·5	156	3·2	164	1·04	174	12	7·0	0·07	1·1	17	6	260	47	18·1	0·30	1·65	76	16	21·0	0·10	0·48	2,167	156	7·2	0·99	13·7		10	...	0·06	...	...	15	0·09	85	0·54	16	9	73	0·46	...	329	2·08	...	...	176	1·12	...	...	505	3·20	...	...	1884
1885	161,526	36·2	24·7	174	4·3	113	0·70	70	3	4·3	0·02	0·43	9	7	253	56	22·1	0·35	1·58	93	26	28·0	0·16	0·57	1,227	83	6·8	0·51	7·6		16	...	0·10	...	...	359	2·22	49	0·30	11	4	64	0·40	...	368	2·28	...	...	138	0·86	...	...	506	3·13	...	...	1885
1886	165,585	36·9	20·7	156	2·4	147	0·89	5	...	...	...	0·03	1	...	205	34	16·6	0·21	1·27	73	19	26·0	0·11	0·44	1,004	45	4·5	0·27	6·1		12	...	0·07	...	...	42	0·25	102	0·62	14	11	81	0·49	...	362	2·18	...	...	155	0·94	...	...	517	3·12	...	...	1886
1887	169,745	36·1	23·3	174	3·1	115	0·68	7	...	...	...	0·04	37	4	325	42	12·9	0·25	1·92	90	31	34·4	0·18	0·53	1,208	38	3·1	0·22	7·1		19	...	0·11	...	...	211	1·24	71	0·42	10	4	77	0·45	...	341	2·01	...	...	167	0·98	...	...	508	3·0	...	...	1887
1888	174,012	34·5	18·7	138	1·3	66	0·38	...	...	...	...	...	4	1	122	23	18·9	0·13	0·70	97	33	34·0	0·19	0·56	749	24	3·2	0·14	4·3		5	...	0·03	...	...	10	0·06	64	0·37	5	3	115	0·66	...	348	2·00	...	...	136	0·78	...	...	484	2·78	...	...	1888
1889	178,385	34·2	22·6	175	2·8	198	1·11	...	...	...	...	...	7	2	136	19	14·0	0·11	0·76	96	30	31·2	0·17	0·54	601	30	5·0	0·17	3·4		13	...	0·07	...	...	94	0·53	129	0·72	2	2	73	0·41	...	387	2·18	...	...	214	1·20	...	...	601	3·38	...	...	1889
1890	182,866	36·0	23·4	169	1·9	157	0·86	4	...	...	...	0·02	17	3	198	35	17·7	0·19	1·08	181	44	24·3	0·24	0·99	613	26	4·2	0·14	3·3		25	...	0·14	...	...	7	0·04	80	0·44	4	3	92	0·50	...	383	2·10	...	...	186	1·02	...	...	569	3·12	...	...	1890
1891	186,976	35·7	23·6	175	2·5	83	0·44	...	...	...	...	...	19	2	134	24	17·9	0·13	0·72	121	42	34·7	0·22	0·65	785	39	5·0	0·21	4·2		11	...	0·06	...	...	128	0·68	179	0·96	5	2	107	0·57	...	398	2·13	...	...	259	1·39	...	...	657	3·52	...	...	1891
1892	189,770	34·6	19·8	150	1·5	73	0·38	4	1	25·0	0·00	0·02	...	...	97	14	14·4	0·07	0·51	156	41	26·3	0·22	0·82	963	29	3·0	0·15	5·1		8	...	0·04	...	...	67	0·35	75	0·40	7	2	105	0·56	...	409	2·15	...	...	204	1·08	...	...	613	3·23	...	...	1892
1893	192,478	34·4	21·4	174	2·4	154	0·80	25	...	...	...	0·13	3	2	141	25	17·7	0·13	0·73	171	28	16·4	0·15	0·89	693	23	3·3	0·12	3·6		8	...	0·04	...	...	208	1·08	33	0·17	4	2	123	0·64	...	347	1·81	...	...	190	0·99	...	...	537	2·78	...	...	1893
1894	195,285	32·0	18·8	157	2·0	79	0·40	2	...	...	...	0·01	...	...	164	30	18·3	0·15	0·84	112	27	24·1	0·14	0·57	826	27	3·3	0·14	4·2		7	...	0·04	...	...	94	0·48	149	0·76	4	1	116	0·60	...	370	1·90	...	...	167	0·86	...	...	537	2·74	...	...	1894
1895	198,141	32·4	20·8	186	2·2	152	0·77	...	...	...	...	...	...	...	213	48	22·5	0·24	1·07	174	49	28·2	0·25	0·88	959	26	2·7	0·13	4·8		3	...	0·02	...	...	140	0·71	57	0·29	13	5	141	0·71	...	406	2·05	...	...	218	1·10	...	...	624	3·15	...	...	1895
1896	201,035	33·3	19·4	165	1·9	77	0·38	...	...	...	...	...	...	...	176	33	18·7	0·16	0·87	164	34	20·7	0·17	0·82	896	23	2·6	0·11	4·4		6	...	0·03	...	...	133	0·66	95	0·47	6	5	142	0·71	...	401	1·99	...	...	206	1·03	...	...	607	3·02	...	...	1896
1897	203,871	33·5	20·0	177	1·7	142	0·70	...	...	...	...	...	...	...	138	33	23·9	0·16	0·68	102	19	18·6	0·09	0·50	496	24	4·8	0·12	2·4		4	...	0·02	...	...	96	0·47	62	0·30	7	3																

GENERAL STATISTICS.

POPULATION.—As estimated by the Registrar General at the middle of the year 1920—**286,061.**

RETURN SHEWING THE ESTIMATED POPULATION OF THE DIFFERENT
WARDS IN THE CITY, ACREAGE, POPULATION PER ACRE, ETC.

Ward.	Population.	Gross Area in acres.	Less for Open Spaces in acres.	Nett Area in acres.	Population per acre, gross.	Nett.
St. Nicholas' ...	3,759	127	1	126	29	29
St. Thomas' ...	14,862	1,636	1,130	506	9	29
St. John's ...	16,175	169	1	168	96	96
Stephenson ...	19,755	215	...	215	92	92
Armstrong ...	16,462	178	31	147	92	112
Elswick ...	13,324	253	17	236	52	56
Westgate ...	16,082	90	1	89	177	180
Arthur's Hill ...	12,039	142	6	136	84	88
Benwell ...	18,526	550	20	530	33	35
Fenham ...	11,624	1,189	...	1,189	9	9
All Saints' ...	18,649	176	2	174	106	107
St. Andrew's ...	13,146	173	3	170	76	77
Jesmond ...	11,640	441	35	406	26	29
Dene ...	12,833	818	37	781	15	17
Heaton ...	16,335	225	76	149	72	109
Byker ...	18,418	140	...	140	132	132
St. Lawrence ...	18,868	181	3	178	104	106
St. Anthony's ...	16,627	601	...	601	28	28
Walker ...	16,937	1,149	37	1,112	14	15
CITY ...	286,061	8,453	1,400	7,053	33	41

INHABITED HOUSES.—**51,774**, shewing (each flat and each tenement holding being counted as one house) an average of 5.52 persons per dwelling.

RATEABLE VALUE.—**£1,835,526.** A penny rate produced £7,294.

SOCIAL CONDITIONS.—The principal **Trades and Occupations** are of a healthy nature, being generally engineering and machine making; conveyance of men, goods, and messages; building and works of construction, *e.g.*, ship

building; and connected with ships and boats, sea-faring and harbour work; food, tobacco, drink, and lodging; coal and shale mines; and commercial or business occupations.

The amount of **Poor Law Relief** granted during the year ended 30th September, 1920, was £75,973 for outdoor relief, and £46,078 for indoor maintenance, making a total of **£122,051**, as compared with **£83,032** in the previous year.

The City contains many **Hospitals** and other medical charities, but as wide surrounding districts are also served by them, figures as to patients treated are not of local value.

MARRIAGES.—3,036 Marriages took place during the year, as compared with 2,985 in 1919, and 2,544 in 1918.

BIRTHS.—8,070, equivalent to a rate of **28·0** per 1,000 population.

DEATHS.—(All causes)—4,609, equivalent to an uncorrected rate of 16·1 per 1,000, and, after deduction of the deaths of 779 non-citizens, and addition of 195 Newcastle residents who died elsewhere, to a corrected rate of **14·0** per 1,000 population. In 1919 the death rate was 17·6.

8 deaths were *uncertified*, (4 Premature Births, 1 Convulsions, 1 Pneumonia, 1 Cerebral Hæmorrhage, and 1 Senile Decay).

Seventeen **Orders for Burial** (Newcastle-upon-Tyne Improvement Act, 1882, Sec. 47) were given, 3 being in respect of bodies lying in inhabited rooms, and 14 being cases from hospital.

TOTAL DEATHS DURING RECENT YEARS FROM CERTAIN CLASSES OF
DISEASE.

Classification in Table III. of Ministry of Health.

	II. Nervous System.	III. Circu- latory.	IV. Respira- tory.	V. Digestive.	XIII. External Causes.
1912	410	435	603	204	152
1913	457	453	722	332	114
1914	448	505	863	465	142
1915	470	635	873	361	163
1916	477	448	856	281	117
1917	497	478	864	268	135
1918	498	503	957	252	135
1919	439	497	1,040	272	133
1920	384	534	861	275	124

INFANTILE MORTALITY.—817 Infants died before completing the first year of life, representing a rate of **101** deaths per 1,000 births.

ZYMOTIC DEATH RATE.—There were 263 deaths from the “Chief Zymotic Diseases”—Smallpox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Fever (Typhus, Simple Continued, and Enteric) and Diarrhœa,—equivalent to 0·9 deaths per 1,000 population.

TUBERCULOSIS.—489 persons died from various forms of Tuberculosis, 368 being from Pulmonary, and 121 from Other Forms. The equivalent death rates are *All Forms* **1·71**, *Pulmonary* **1·28**, and *Other Forms than Pulmonary* **0·42** per 1,000 population.

For comparison of death rates with previous years see table, page 32A.

For particulars of deaths, as to site of disease, age, etc., see table, page 40A.

GEOLOGY.—The geological formation of the area consists of heavy clay on the top of hard sandstone, which overlies coal seams.

CLIMATOLOGY.—The mean barometer reading was 29·90 in.

The mean maximum temperature was 66·2° F., and the mean minimum 35·4° F.

Measureable rain fell on 148 days, amounting in all to 26·36 inches, and as the district average is 27·98 inches, there was a deficiency of 1·53 inches.

December was the wettest month, when the total rainfall was 3·75, exceeding the average by 1·45 inches ; but May was also very wet, the rainfall being 3·23, exceeding the average by 1·48 inches, while other months with rainfall above the average were January, 2·78 inches (0·92 above average), March, 2·98 inches (0·35 above average), and April, 3·02 inches (1·19 above average).

The wettest day was October 4th, when 0·96 inches of rain fell.

The driest months were February, with 0·74 inches of rain ; June, with 0·85 inches of rain, and November, with 0·82 inches. February and November were abnormally droughty.

The prevailing winds were westerly, frequency of direction being noted as follows :—

W., N.W., or S.W. on 210 days.

E., N.E., or S.E. on 99 days.

S. on 46 days.

N. on 7 days.

This information is supplied through the courtesy of the proprietors of the *Newcastle Chronicle*.

WATER SUPPLY.—The City is served by the Newcastle and Gateshead Water Company with a plentiful supply of pure upland surface water, collected from large catchment areas at Catcleugh, close to the Cheviots, and in lower Northumberland.

It is stored in large impounding reservoirs at Catcleugh, Hallington, and Whittle Dene, and passes through sand filters at Whittle Dene and Throckley.

In the vast majority of cases the household taps are served directly from the mains without intervening cisterns.

A separate trade supply is piped to some of the great riverside works from a point above the filters.

The Bacteriological reports upon the water samples are given on page 119.

The consumption of water in the City has increased of late years, chiefly on account of the greater requirements of industry. Coincidentally there has been no increase in the area of the filter beds, nor in the storage capacity of the reservoirs, and it is not surprising that the results of the bacteriological examinations should show a somewhat high degree of organismal contamination.

SEWERAGE.—There are 280 miles and 1,500 yards of sewers discharging at various points along the seven miles of river frontage directly into the Tyne, which is tidal.

CLEANSING AND SCAVENGING.—The removal of house refuse has reached the conditions prevailing prior to the War, with the exception that, excluding certain areas, the ashbins are now only emptied once per week instead of twice. With the prevailing high costs it is improbable that the frequency of removal can be increased.

There are 52,406 dry ashtubs and galvanised iron bins, and 51,798 water closets and 4,827 conservancy system closets in the City. Conversion of the latter was proceeding steadily up to the outbreak of War, at the rate of 600 to 700 per annum. During 1920, 36 pailclosets and 24 cell privies were removed and waterclosets substituted. All the schools are served by the water-carriage system.

MORTALITY RATES, YEAR 1920.

COMPARISON WITH OTHER DISTRICTS.

DISTRICT.	Birth Rate.	General Death Rate.	Infantile Mortality Rate.	Death Rate per 1000 from Enteric Fever, Smallpox, Scarlet Fever, Measles, Whooping Cough, and Diphtheria	Tubercul- osis (all causes) Death Rate.
England and Wales	25·4	12·4	80	0·51	1·13
96 Great Towns (includ. London)	26·2	12·5	85	0·57	1·26
NEWCASTLE-UPON-TYNE	28·0	14·0	101	0·46	1·71
Hull	29·1	13·2	98	0·48	1·27
Leeds	25·0	14·7	110	0·74	1·56
Bradford	20·5	13·31	92	0·28	1·07
Sheffield	26·7	13·52	103	0·43	1·18
Manchester	24·8	13·25	97	0·54	1·39
Salford	27·3	13·7	98	0·49	1·5
Liverpool	32·0	16·4	113	1·12	1·7
Nottingham	25·6	12·9	96	0·84	1·11
Leicester	24·0	11·70	89	0·59	1·33
Stoke-on-Trent	30·9	12·8	98	0·56	1·39
Birmingham	27·6	12·6	83	0·71	1·10
Cardiff	24·1	11·3	84	0·59	1·46
Bristol	25·6	12·1	70	0·54	1·19
Portsmouth	25·9	11·1	60	0·59	1·07
London (County)	26·5	12·4	75	0·67	1·27
Gateshead	32·8	14·6	111	0·45	1·79
South Shields	34·2	17·2	121	0·32	1·76
Tynemouth	32·1	15·8	92	0·28	1·80
Sunderland	34·9	16·0	103	0·38	1·50
Middlesbrough	33·5	15·9	135	0·65	1·35
*County of Northumberland ...	28·3	12·9	90	0·42	1·28
*County of Durham	30·0	12·3	106	0·59	1·08

* Administrative County.

TABLE I. OF MINISTRY OF HEALTH.

Vital Statistics of Whole District during 1920 and previous Years.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.			TOTAL DEATHS REGISTERED IN THE DISTRICT.		TRANSFERABLE DEATHS		NETT DEATHS BELONGING TO THE DISTRICT.			
		Uncorrected Number	Nett.		Number	Rate.	of Non-residents registered in the District	of Residents not registered in the District	Under 1 Year of Age.		At all Ages.	
			Number	Rate.					Number	Rate per 1,000 Nett Births.	Number	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
1906	257,113	8,210			4,831	18·8						
1907	259,082	8,093			4,594	17·7						
1908	261,065	8,382			4,801	18·4						
1909	263,064	7,682			4,459	16·9						
1910	265,077	7,543			4,252	16·0						
1911	267,261	7,089	7,082	26·5	4,667	17·5	448	165	973	137	4,384	16·4
1912	269,193	7,219	7,194	26·7	4,221	15·7	529	146	727	101	3,838	14·5
1913	271,295	7,480	7,460	27·5	4,611	17·0	560	141	908	122	4,192	15·5
1914	271,523	7,564	7,538	27·8	5,069	18·7	546	138	1,029	137	4,660	17·2
1915	278,107	7,575	7,545	27·8†	5,257	18·9	693	207	1,007	133	4,771*	17·2*
1916	278,107	7,332	7,284	26·2	4,875	17·5	680	232	899	123	4,427*	15·9*
1917	278,107	6,548	6,495	23·4	4,646	16·7	718	246	732	113	4,174*	15·0*
1918	278,107	6,555	6,468	23·3	5,380	19·3	872	308	692	107	4,816*	17·3*
1919	275,099	6,793	6,674	23·3§	5,358	19·5	737	234	806	120	4,855*	17·6*
1920	286,061	8,433	8,070	28·0‡	4,609	16·1	779	195	817	101	4,025	14·0

Area of District in acres (exclusive of area covered by water) 8,453. Total population at all ages at census 1911, 266,603.

† In accordance with the instructions of the Supt. of Statistics, General Register Office, Somerset House, this rate is calculated on the population for 1914. * Civilians only.

§ Calculated on a population of 286,571. ‡ Calculated on a population of 287,255.

Corrected Death Rates in different Wards, 1920.

St. Nicholas'.	St. Thomas'.	St. John's.	Stephenson.	Armstrong.	Elswick.	Westgate.	Arthur's Hill.	Benwell.	Fenham.	All Saints'.	St. Andrew's.	Jesmond.	Dene.	Heaton.	Byker.	St. Lawrence.	St. Anthony's.	Walker.	City.
17·0	* 10·7	16·7	16·2	14·4	15·8	12·5	* 12·7	14·9	9·6	19·3	17·7	9·1	9·4	11·9	14·1	15·1	13·4	* 14·4	14·0

* All deaths occurring in Public Institutions have been allotted to the Wards to which they properly belong.

TABLE II. OF MINISTRY OF HEALTH.

(See under **Infectious Diseases**, page 69).

TABLE IV. OF MINISTRY OF HEALTH.

(See under **Infantile Mortality**, page 44A).

TABLE SHOWING SOME OF THE CHIEF VITAL STATISTICS FOR CERTAIN LOCAL COUNTIES AND COUNTY BOROUGHS
IN QUINQUENNIAL PERIODS FROM 1896-1920
(SUPPLIED BY THE MEDICAL OFFICER OF HEALTH, COUNTY DURHAM).

NAME OF DISTRICT.	DEATH RATE.				INFANT MORTALITY RATE.				DIPHTHERIA.				ENTERIC FEVER.				EPIDEMIC DIARRHŒA.			
	1896 to 1900.	1901 to 1905	1906 to 1910	1911 to 1915	1916 to 1920	1896 to 1900	1901 to 1905	1906 to 1910	1911 to 1915	1916 to 1920	1896 to 1900	1901 to 1905	1906 to 1910	1911 to 1915	1916 to 1920	1896 to 1900	1901 to 1905	1906 to 1910	1911 to 1915	1916 to 1920
Darlington ...	15·6	16·0	14·1	14·2	14·8	140	145	115	105	117	0·12	0·38	0·14	0·17	0·13	0·14	0·19	0·08	0·04	0·02
Gateshead ...	19·3	18·7	16·1	16·8	17·0	180	161	137	132	121	0·08	0·12	0·18	0·15	0·13	0·15	0·06	0·03	0·05	0·01
Newcastle ...	21·0	19·5	17·6	16·1	15·9	179	155	132	126	113	0·13	0·17	0·19	0·11	0·09	0·16	0·17	0·05	0·05	·008
South Shields ...	19·9	18·8	17·1	17·7	18·5	167	148	133	130	122	0·07	0·14	0·19	0·08	0·10	0·30	0·14	0·06	0·06	0·02
Sunderland ...	21·1	20·0	18·5	17·8	18·9	175	159	136	137	120	0·12	0·19	0·22	0·13	0·06	0·38	0·23	0·09	0·02	0·01
†Tynemouth ...	18·5	19·3	17·4	16·2	17·4	158	158	132	123	113	0·06	0·14	0·16	0·12	0·06	0·12	0·13	0·04	0·10	0·07
West Hartlepool	15·4	15·9	13·8	16·0	16·1	156	132	122	130	119	0·08	0·31	0·18	0·16	0·09	0·08	0·07	0·04	0·02	0·02
*Cumberland ...	...	15·7	15·1	17·7	14·5	...	127	121	110	95	...	...	0·13	0·14	0·20	...	...	0·14	0·4	0·28
Northumberland	17·1	16·9	13·8	13·7	14·3	158	152	123	115	99	0·16	0·15	0·15	0·15	0·16	0·22	0·15	0·06	0·08	0·05
Durham County	18·0	17·8	16·4	15·5	13·9	167	159	139	134	113	0·09	0·25	0·18	0·19	0·17	0·23	0·17	0·14	0·09	0·03

†Statistics for 1896 not available; those shown are for the period 1897-1900.
*Statistics for the periods left blank not available.

TABLE III. OF THE MINISTRY OF HEALTH.
RETURN OF DEATHS FROM "ALL CAUSES" DURING THE 52 WEEKS ENDED JANUARY 1ST, 1921.

CAUSE OF DEATH.	AGE PERIODS.																	WARDS—GROSS DEATHS.																	Trans- ferable Deaths.	Deaths in Institutions in the City of "Residents" or "Non-Residents"						
	GROSS.								NETT.									St. Nicholas.	St. Thomas.	St. John's.	Stephenson.	Armstrong.	Elswick.	Westgate.	Arthur's Hill.	Benwell.	Fenham.	All Saints.	St. Andrew's.	Jesmond.	Dene.	Heaton.	Byker.	St. Lawrence.			St. Anthony's.	Walker.	TOTAL.	Inward.	Outward.	Nett Deaths.
	Under 1 year.	1 year and under 2.	2 years and under 5.	5 years and under 15.	15 years and under 25.	25 years and under 45.	45 years and under 65.	65 years and above.	TOTAL.	Under 1 year.	1 year and under 2.	2 years and under 5.	5 years and under 15.	15 years and under 25.	25 years and under 45.	45 years and under 65.	65 years and above.																									
I.—General Diseases.																																										
Enteric Fever	...	...	...	...	1	...	...	1	...	...	...	...	...	2	...	...	...	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	2	1				
Malaria	...	...	...	...	1	...	...	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...					
Measles	8	21	10	2	...	...	...	41	8	21	10	3	...	...	...	...	42	1	2	2	4	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...					
Scarlet Fever	1	3	10	7	...	...	...	21	1	3	9	7	...	...	...	...	20	1	1	2	2	3	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...					
Whooping Cough	26	10	8	2	...	...	...	46	25	10	8	2	...	...	...	...	45	...	1	3	1	2	1	2	...	...	...	...	...	...	...	...	...	...	...	...						
Diphtheria	2	1	14	7	1	1	...	26	2	1	14	5	1	1	...	...	24	...	...	2	1	4	1	1	...	...	...	...	...	...	...	...	...	...	...	...						
Influenza	4	4	2	6	8	24	25	100	4	4	2	6	8	22	26	18	90	...	8	4	4	2	11	8	3	9	3	12	7	...	2	3	5	5	8	6						
Dysentery	...	...	...	...	...	2	...	2	...	...	...	...	...	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...						
Erysipelas	2	...	...	...	...	2	...	7	1	...	...	...	...	2	2	1	6	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...						
Chickenpox	1	...	...	...	...	2	2	1	7	1	...	...	...	2	2	1	6	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...						
Pyæmia, Septicæmia	3	1	1	5	2	6	4	22	1	1	1	2	...	1	2	...	8	...	12	3	...	1	...	...	...	1	1	2	...	...	...	...	...	2	22	...						
Tetanus	...	...	...	...	3	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...						
Actinomycosis	...	...	...	...	1	...	...	1	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...						
Pulmonary Tuberculosis (not acute)	3	2	4	24	70	158	73	12	346	2	2	3	25	69	162	82	13	358	7	20	25	25	19	15	15	9	22	14	37	14	7	11	11	23	30	18	24					
Acute Phthisis	1	...	...	1	3	5	...	...	10	1	...	...	1	2	5	1	...	10	...	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...					
Acute Miliary Tuberculosis	...	...	...	4	1	...	...	...	5	...	...	...	4	1	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...						
Tuberculous Meningitis	5	11	15	17	10	5	1	...	64	6	11	14	13	6	2	1	...	53	1	16	2	10	8	1	2	1	1	...	5	5	...	1	2	2	4	3	...					
Tuberculosis of Peritoneum and Intestines	2	4	9	6	6	5	1	...	33	2	5	9	4	5	4	...	...	29	2	7	1	1	3	2	1	...	5	...	1	3	...	...	1	2	2	1	1					
Tuberculosis of Spinal Column	...	...	...	2	2	...	5	1	10	...	...	...	1	2	...	5	1	9	...	2	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...						
Tuberculosis of Joints	...	...	1	...	2	4	1	...	8	...	...	...	...	2	...	...	...	2	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...						
Tuberculosis of other Organs	...	...	...	1	2	3	3	...	9	...	...	...	...	...	3	2	...	5	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...						
Disseminated Tuberculosis	...	3	2	6	5	4	1	...	21	...	2	2	6	4	3	1	...	18	...	5	2	...	2	...	...	...	...	2	1	...	...	...	...	...	...	...						
TOTAL TUBERCULOSIS																																										
Rickets, Softening of Bones	4	1	...	1	...	...	...	...	6	4	1	...	1	...	...	...	...	6	...	1	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...						
Syphilis	15	2	...	...	1	1	1	1	21	12	2	...	...	1	2	...	2	19	1	3	1	1	2	2	1	...	5	...	1	1	...	...	...	...	...	...						
Cancer of the Buccal Cavity	...	...	...	...	...	10	5	...	15	...	...	...	...	...	7	5	...	12	...	5	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...						
Cancer of the Stomach, Liver, etc.	...	...	...	...	1	10	60	30	101	...	...	...	...	1	6	43	22	72	1	29	6	7	4	4	1	4	2	3	3	5	4	1	6	6	6	3	...					
Cancer of the Peritoneum, Intestines, and Rectum	...	1	...	2	3	8	38	23	75	...	...	...	1	1	5	19	19	45	1	20	...	5	...	4	1	2	3	2	9	9	5	4	3	3	...	...	...					
Cancer of the Female Genital Organs	...	...	...	...	8	21	11	...	40	...	...	...	...	7	19	11	...	37	...	3	3	4	3	1	2	...	...	1	6	1	1	1	2	2	3	...						
Cancer of the Breast	...	...	...	...	5	17	6	...	28	...	...	...	...	4	13	6	...	23	...	4	3	...	3	...	...	2	3	1	...	2	4	1	1	1	2	...						
Cancer of the Skin	...	...	...	...	...	6	3	...	9	...	...	...	...	...	4	2	...	6	...	3	...	1	...	...	...	2	...	...	...	2	...	...	...	...	...	...						
Cancer of other or unspecified organs	...	...	...	...	1	9	34	14	58	...	...	...	...	1	7	27	14	49	1	11	3	6	2	4	1	3	4	1	2	2	2	2	3	2	3	4	...					
Other Tumours (situation undefined)	...	...	...	...	2	1	5	...	8	...	...	...	...	1	1	5	...	7	...	3	...	1	...	...	...	...	...	...	2	...	...	...	...	...	...	...						
Rheumatic Fever	...	...	6	3	5	8	1	...	23	...	...	...	6	2	5	6	1	20	...	4	1	2	1	1	...	2	2	...	2	...	...	...	...	...	...	...						
Chronic Rheumatism, Osteo-Arthritis	...	...	...	...	...	6	4	...	10	...	...	...																														

TABLE III. OF THE MINISTRY OF HEALTH.—CONTINUED.
RETURN OF DEATHS FROM "ALL CAUSES" DURING THE 52 WEEKS ENDED JANUARY 1ST, 1921.

CAUSE OF DEATH.	AGE PERIODS.																	WARDS—GROSS DEATHS.																				TRANS-FERABLE DEATHS.		Deaths in Institutions in the City of "Residents" or "Non-Residents."				
	GROSS.								NETT.								TOTAL.	St. Nicholas.	St. Thomas.	St. John's.	Stephenson.	Armstrong.	Elswick.	Westgate.	Arthur's Hill.	Benwell.	Fenham.	All Saints.	St. Andrew's.	Jesmond.	Dene.	Heaton.	Byker.	St. Lawrence.	St. Anthony's.	Walker.	TOTAL.	Inward.	Outward.					
	Under 1 year.	1 year and under 2.	2 years and under 5.	5 years and under 15.	15 years and under 25.	25 years and under 45.	45 years and under 65.	65 years and above.	TOTAL.	Under 1 year.	1 year and under 2.	2 years and under 5.	5 years and under 15.	15 years and under 25.	25 years and under 45.	45 years and under 65.																									65 years and above.	TOTAL.		
Brought forward	375	164	133	170	210	531	812	732	3,127	358	157	125	146	162	473	767	711	2,900	48	425	196	223	165	146	133	107	191	83	265	187	75	81	132	182	184	146	158	3,127	152	379	2,900	996		
V.—Diseases of Digestive System.																																												
Pyorrhœa	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	1	...	3	...	...	1	...
Diseases of the Pharynx, Tonsillitis	...	1	...	2	...	...	...	...	3	...	1	...	2	...	...	...	...	3	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	37	...	20	17	26	
Perforating Ulcer of Stomach	1	...	...	...	12	20	12	2	37	1	...	...	...	...	...	9	6	1	17	...	19	1	1	1	1	...	...	2	2	1	4	1	1	2	...	...	...	...	...	2	...	30	2	
Inflammation of Stomach	16	1	1	1	2	1	...	6	28	16	1	1	1	2	2	1	6	30	1	1	1	1	2	3	1	...	1	...	5	1	...	...	...	4	2	4	1	1	28	2	...	6	2	
Other Diseases of the Stomach	1	...	1	...	1	1	4	2	10	1	...	1	...	...	...	2	2	6	...	3	2	...	1	...	...	...	...	...	...	1	1	...	...	...	...	...	...	10	...	4	...	...		
Diarrhœa and Enteritis (under 2 years), including Dysentery, Epidemic or Zymotic	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Enteritis, and Intestinal Catarrh	94	14	...	...	...	...	...	...	108	88	13	...	...	...	...	...	...	101	...	9	7	7	6	2	2	3	9	1	14	5	2	1	...	6	8	16	10	108	...	7	101	25		
Diarrhœa and Enteritis (2 years and over)	...	...	7	2	5	9	10	9	42	...	...	7	2	2	5	6	8	30	...	11	3	4	1	3	...	1	1	...	4	5	2	...	2	...	2	1	2	42	...	12	30	21		
Appendicitis	1	...	...	15	11	6	6	2	41	...	...	1	6	3	3	1	...	14	...	27	3	1	1	1	2	...	...	...	...	3	...	...	...	2	2	1	41	...	1	28	14			
Hernia, Intestinal Obstruction	14	3	1	2	2	6	28	21	77	6	2	...	2	...	2	7	9	28	1	47	...	3	...	2	1	1	1	1	4	5	2	2	...	2	2	2	1	77	...	49	28	66		
Other Diseases of the Intestines	2	...	...	...	...	1	3	1	7	2	...	...	...	...	1	3	1	7	...	...	...	...	1	1	2	1	...	...	1	...	...	...	...	...	1	...	7	...	...	7	1			
Acute Yellow Atrophy of Liver	1	...	...	...	...	1	...	...	2	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	1	1			
Cirrhosis of the Liver	...	...	...	...	1	2	6	5	14	...	...	...	...	1	1	5	5	12	...	2	1	2	1	1	...	1	...	...	2	...	...	...	3	1	...	...	14	...	2	12	3			
Biliary Calculi	...	...	...	...	1	1	13	6	21	...	...	...	...	...	...	3	3	6	...	14	...	...	...	...	...	2	...	...	3	1	...	...	...	...	...	21	...	15	6	9				
Other Diseases of the Liver	...	...	1	1	...	2	4	6	14	...	...	1	1	...	...	2	5	9	...	7	1	...	...	1	1	...	...	...	...	...	...	...	...	2	1	...	14	1	6	9	7			
Abscess of the Spleen	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	1	...	1	...	...	1	1		
Peritonitis (cause unstated)	1	...	...	1	1	4	1	2	10	1	...	...	...	1	1	...	1	4	...	6	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	10	...	6	4	5			
Other Diseases of the Digestive System	...	...	...	1	...	3	5	...	9	...	...	...	...	...	2	4	...	6	...	3	...	...	...	...	...	1	...	...	1	...	...	...	1	...	9	...	3	6	6					
VI.—Non-Venereal Diseases of Genito-Urinary System and Annexa.																																												
Acute Nephritis	...	2	1	2	2	11	8	3	29	...	2	1	...	...	6	8	3	20	1	11	...	5	2	...	1	...	1	...	1	1	...	...	2	1	2	...	1	29	1	10	20	16		
Bright's Disease	...	...	...	2	3	15	54	37	111	...	...	...	...	2	7	44	37	90	1	27	2	6	6	3	11	10	3	...	...	2	3	3	6	6	1	...	...	111	8	21	90	31		
Other Diseases of the Kidney and Annexa	...	...	...	1	2	1	3	1	8	...	...	...	...	1	1	2	1	5	...	4	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	8	1	4	5	6			
Calculi of the Urinary Passages	...	...	...	1	...	1	...	2	4	...	...	...	...	...	...	...	1	1	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	3	1	2				
Diseases of the Bladder	...	...	...	...	1	1	4	4	9	...	...	...	...	...	3	2	...	5	1	4	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	9	...	4	5	9				
Diseases of the Urethra, Urinary Abscess, &c.	...	...	...	...	...	3	...	...	3	...	...	...	...	...	2	1	...	3	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1	1	3	3					
Diseases of the Prostate	...	...	...	...	...	2	16	...	18	...	...	...	...	...	...	7	...	7	...	8	...	...	1	...	...	...	...	...	...	4	2	...	1	...	...	18	...	11	7	7				
Uterine Hæmorrhage (non-puerperal)	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1				
Uterine Tumour (non-cancerous)	...	...	...	...	4	1	...	...	5	...	...	...	...	2	...	...	...	2	...	2	1	...	...	1	...	...	...	...	...	...	...	...	...	...	5	...	3	2	3					
Other Diseases of the Uterus	...	...	...	2	4	...	...	...	6	...	...	...	...	1	...	...	...	1	...	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	5	1	5					
Ovarian Cyst, Tumour (non-cancerous)	...	...	...	...	1	2	...	...	3	...	...	...	...	...	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	2	1	2					
Other Diseases of the Female Genital Organs	...	...	...	1	3	1	...	...	5	...	...	...	...	2	...	...	...	2	...	2	...	...	...	...	...	...	...	...	1	...	...	...	...	...	5	...	3	2	5					
VII.—The Puerperal State.																																												
Accidents of Pregnancy	...	...	...	...	4	...	...	...	4	...	...	...	...	...	4	...	...	4	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	4	...	...	4	...	2				
Puerperal Hæmorrhage	...	...	...	...	3	...	...	...	3	...	...	...	...	...	2	...	...	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	1	2	2						
Other Accidents of Childbirth	...	...	...	3	12	...</																																						

REPORT OF THE
MATERNITY AND CHILD WELFARE
MEDICAL OFFICER.

II.—THE CHILD.

INFANTILE MORTALITY, MATERNITY AND
CHILD WELFARE.

INFANTILE MORTALITY.

SUMMARY OF BIRTHS AND DEATHS, 1920.

	LEGITIMATE.			ILLEGITIMATE.			Grand Total.
	M.	F.	Total.	M.	F.	Total.	
Total Births in the Year	4,191	3,846	8,037	221	175	396	8,433
Nett ,, ,,	4,023	3,699	7,722	191	157	348	8,070
Nett Deaths ,, (under 1 year of age).	459	314	773	22	22	44	817

BIRTHS (UNCORRECTED) IN WARDS IN THE DIFFERENT QUARTERS OF THE YEAR 1920.

WARD.				1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	TOTALS.
St. Nicholas'	...	...		18	23	24	17	82
St. Thomas'	...	...		100	74	66	65	305
St. John's	...	...	...	159	118	130	107	514
Stephenson	...	...	...	146	160	145	164	615
Armstrong	...	...	...	124	155	122	121	522
Elswick	...	...	...	107	121	97	89	414
Westgate	...	...	...	153	119	97	118	487
Arthur's Hill	...	...		52	40	43	29	164
Benwell	...	...	...	182	152	146	146	626
Fenham	...	...	...	90	86	74	57	307
All Saints'	...	...	...	208	219	212	209	848
St. Andrew's	...	...		126	93	87	59	365
Jesmond	...	...	...	49	47	41	37	174
Dene	...	...	...	76	65	47	60	248
Heaton	...	...	...	104	95	83	60	342
Byker	...	...	...	196	175	127	126	624
St. Lawrence	...	...		206	162	168	146	682
St. Anthony's	...	...		194	162	128	135	619
Walker	...	...	...	128	127	123	117	495
City	...	...	...	2,418	2,193	1,960	1,862	8,433

DISTRIBUTION OF DEATHS.

WARDS.	Nett Deaths of Children under 1 year of age in 1920.					Children under 1 year of age— Death rate per 1,000 Births.	Birth Rate per 1,000 Popula- tion (Uncor- rected).
	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Whole Year.		
St. Nicholas' ...	2	4	1	1	8	97	21·7
St. Thomas' ...	16	3	4	6	29	97	20·4
St. John's ...	18	16	18	24	76	148	31·6
Stephenson ...	27	20	9	20	76	124	31·0
Armstrong ...	19	6	10	19	54	104	31·6
Elswick ...	4	6	4	11	25	75	30·9
Westgate ...	15	6	3	14	38	78	30·1
Arthur's Hill ...	3	6	...	3	12	75	13·6
Benwell... ...	24	18	10	24	76	121	33·6
Fenham	5	3	5	6	19	62	26·3
All Saints' ...	22	16	16	19	73	114	45·3
St. Andrew's ...	14	12	9	6	41	102	27·6
Jesmond ...	3	2	2	5	12	72	14·9
Dene	5	3	1	...	9	36	19·1
Heaton	9	4	3	3	19	55	20·8
Byker	17	14	9	15	55	88	33·7
St. Lawrence ...	19	17	8	20	64	94	36·0
St. Anthony's ...	25	16	10	22	73	118	37·1
Walker	16	18	8	16	58	117	29·1
City	263	189	130	234	817	101	29·4

All deaths occurring in Public Institutions have been allotted to the Wards to which they properly belong.

TABLE IV. OF MINISTRY OF HEALTH.

44A

RETURN OF DEATHS UNDER ONE YEAR OF AGE DURING THE 52 WEEKS ENDED 1ST JANUARY, 1921.

CAUSE OF DEATH.	AGE PERIODS.																				Deaths in Institutions in the City of "Residents" or "Non-Residents."
	GROSS.										NETT (after allowing for transfers).										
	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	TOTAL under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	TOTAL under 1 Year of Age.	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	TOTAL under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	TOTAL under 1 Year of Age.	
I.—General Diseases.																					
Measles ...	...	...	...	...	...	...	1	3	4	8	...	...	...	...	...	...	1	3	4	8	...
Scarlet Fever ...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	1	...	1	...
Whooping Cough ...	...	...	1	1	2	4	10	6	4	26	...	...	1	1	2	4	10	5	4	25	1
Diphtheria ...	...	...	...	...	...	...	...	...	2	2	...	...	...	...	...	...	...	...	2	2	...
Influenza ...	...	...	1	...	1	...	2	1	...	4	...	...	1	...	1	...	2	1	...	4	...
Erysipelas ...	...	...	...	1	1	...	1	...	...	2	...	...	1	...	1	...	...	...	...	1	1
Chickenpox ...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	1	1	...
Pyæmia, Septicæmia ...	...	...	...	...	...	...	...	1	2	3	...	...	...	...	...	...	...	...	1	1	3
Pulmonary Tuberculosis (not acute)...	...	...	...	...	...	1	2	...	...	3	...	...	...	...	...	1	1	...	...	2	1
Acute Phthisis ...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	1	1	...
Tuberculous Meningitis ...	...	...	...	...	...	...	...	2	3	5	...	...	...	...	...	...	...	3	3	6	2
Tuberculosis of Peritoneum and Intestines ...	...	...	...	...	...	...	...	1	1	2	...	...	...	...	...	...	...	1	1	2	1
TOTAL TUBERCULOSIS ...	...	...	...	...	...	1	2	3	5	11	...	...	...	...	...	1	1	4	5	11	4
Rickets, Softening of Bones ...	...	...	...	...	...	1	2	1	...	4	...	...	...	...	...	1	2	1	...	4	...
Syphilis ...	1	1	...	1	3	9	1	1	1	15	1	1	...	1	3	8	...	1	...	12	3
Hæmophilia ...	1	...	...	...	1	...	...	...	...	1	1	...	...	1	...	...	...	...	...	1	...
II.—Diseases of Nervous System and Organs of Special Sense.																					
Cerebro-Spinal Fever ...	...	...	...	...	...	...	1	1	...	2	...	...	...	...	...	...	1	1	...	2	2
Meningitis, other forms or undefined ...	...	...	...	...	...	...	2	2	3	7	...	...	...	...	...	...	2	2	2	6	2
Infantile Convulsions ...	12	2	2	3	19	15	11	8	7	60	12	2	2	3	19	15	11	8	8	61	...
III.—Diseases of Circulatory System.																					
Hæmorrhage ...	...	1	...	...	1	...	...	...	...	1	...	1	...	...	1	...	...	...	...	1	1
IV.—Diseases of Respiratory System.																					
Diseases of the Larynx ...	...	1	...	...	1	1	1	1	...	4	...	1	...	...	1	1	1	1	...	4	...
Bronchitis ...	1	4	11	4	20	24	17	12	7	80	1	4	11	4	20	24	17	12	7	80	1
Broncho-pneumonia ...	...	3	4	2	9	25	28	34	21	117	...	3	4	2	9	24	28	31	18	110	15
Lobar Pneumonia ...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	1	...
Pneumonia (type not stated) ...	...	...	1	1	2	4	6	9	4	25	...	...	1	1	2	4	6	6	4	22	3
V.—Diseases of Digestive System.																					
Perforating Ulcer of Stomach ...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	1	1	...
Inflammation of Stomach ...	...	1	1	...	2	5	6	...	3	16	...	1	1	...	2	5	6	...	3	16	2
Dilated Stomach ...	...	1	...	...	1	...	...	...	...	1	...	1	...	...	1	...	...	...	...	1	...
Diarrhœa and Enteritis including Dysentery, Epidemic or Zymotic Enteritis, and Intestinal Catarrh ...	...	1	2	...	3	15	35	21	20	94	...	1	2	...	3	14	33	20	18	88	20
Appendicitis ...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	1
Carried forward ...	15	15	23	13	66	105	127	105	85	488	15	15	23	13	66	102	121	97	78	464	61

TABLE IV. OF MINISTRY OF HEALTH.—Continued.

RETURN OF DEATHS UNDER ONE YEAR OF AGE DURING THE 52 WEEKS ENDED 1ST JANUARY, 1921.

CAUSE OF DEATH.			AGE PERIODS.																			Deaths in Institutions in the City of "Residents" or "Non-Residents."	
			GROSS.										NETT (after allowing for transfers).										
			Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	TOTAL under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	TOTAL under 1 Year of Age.	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	TOTAL under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.		TOTAL under 1 Year of Age.
Brought forward ...			15	15	23	13	66	105	127	105	85	488	15	15	23	13	66	102	121	97	78	464	61
V.—Diseases of Digestive System (continued)—																							
Hernia, Intestinal Obstruction ...			2	...	1	...	3	...	3	3	5	14	...	...	1	...	1	...	1	2	2	6	11
Other Diseases of the Intestines ...			...	...	...	...	...	1	...	...	1	2	...	...	...	...	1	...	...	1	2	1	
Acute Yellow Atrophy of Liver ...			...	1	...	...	1	...	...	...	...	1	...	1	...	...	...	...	...	...	1	...	
Peritonitis (cause unstated) ...			...	...	...	1	1	...	...	...	...	1	...	...	...	1	...	...	...	...	1	...	
VI.—Diseases of Skin and Cellular Tissue.																							
Phlegmon, Acute Abscess ...			...	...	...	...	...	1	1	...	...	2	...	...	...	...	1	1	...	...	2	1	
Diseases of the Integumentary System ...			...	...	...	1	1	...	1	1	...	3	...	...	...	1	1	...	...	2	1		
VII.—Diseases of Bones, &c.																							
Periostitis ...			...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	1	...	...	1	1	
Arthritis (Septic) ...			...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	
VIII.—Malformations.																							
Congenital Malformations ...			16	7	3	...	26	4	4	1	...	35	10	6	2	...	18	4	...	...	22	13	
IX.—Diseases of Early Infancy.																							
Premature Birth ...			135	15	12	5	167	9	...	...	...	176	125	15	12	5	157	9	...	...	166	13	
Infantile Atrophy, Debility, and Marasmus ...			43	11	21	7	82	41	6	4	3	136	43	11	20	7	81	39	6	2	130	13	
Icterus Neonatorum, Sclerema and Œdema Neonatorum ...			...	2	...	...	2	2	...	...	...	4	...	1	...	...	1	2	...	...	3	3	
Atelectasis ...			4	1	...	...	5	...	...	...	...	5	4	1	...	...	5	...	...	...	5	...	
Injuries at Birth ...			1	...	...	...	1	...	...	...	...	1	1	...	...	...	1	...	...	...	1	...	
Other Diseases peculiar to early infancy ...			7	1	...	...	8	1	...	...	...	9	5	1	...	...	6	1	...	...	7	1	
Lack of care ...			...	...	1	...	1	...	...	...	...	1	...	...	1	...	1	...	...	...	1	...	
X.—Affections produced by External Causes.																							
Burns (conflagration excepted) ...			...	...	...	...	...	...	1	1	1	3	...	...	...	...	...	...	...	1	1	3	
Homicide—Hanging ...			1	...	...	...	1	...	...	...	...	1	1	...	...	...	1	...	...	...	1	...	
Suffocation ...			...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	1	...	1	...	
TOTAL ...			224	53	61	27	365	165	144	116	95	885	204	51	59	27	341	159	131	102	84	817	123

SUMMARY OF MORTALITY, 1901-1920.

	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920
Death-rate of Infants <i>under</i> 1 year per 1,000 births ...	177	139	166	155	138	153	126	139	122	123	137	101	122	137	133	123	113	107	120	101
Death-rate of Infants <i>under</i> 3 months per 1,000 births	83·8	74·8	84·9	82·6	71·6	75·6	68·6	76·6	64·8	66·9	71·5	60·3	67·7	70·7	68·2	66·2	58·7	37·7	64·1	62·1
Death-rate of Infants from <i>Premature Birth</i> , per 1,000 births ...	20·1	20·7	25·1	20·9	19·7	22·0	21·2	24·8	19·8	18·8	21·7	19·3	22·0	19·5	24·0	22·0	22·3	27·4	24·6	20·6
Death-rate of Infants <i>under</i> 1 year per 1,000 births, from <i>Premature Birth</i> , plus all <i>Congenital Causes</i> * ...	40·8	51·7	62·1	60·6	52·1	61·5	43·0	44·6	42·3	42·6	43·9	48·0	57·4	51·1	56·6	51·0	46·0	45·3	51·5	43·1
Death-rate of Infants <i>under</i> 1 year per 1,000 births, from <i>Diarrhœa</i> and all other <i>Digestive Diseases</i> † ...	45·7	12·8	26·9	21·8	22·4	35·2	12·7	24·8	13·5	16·7	25·1	7·8	16·6	25·3	20·1	14·3	14·8	11·9	14·7	14·9
Death-rate of Infants <i>under</i> 1 year per 1,000 births, from <i>Infantile Atrophy</i> , <i>Debility</i> and <i>Marasmus</i>	15·8	19·8	30·8	29·2	24·4	31·4	11·1	10·6	14·6	13·5	22·7	21·4	25·6	23·0	25·0	22·4	17·7	13·0	18·0	16·9
Death-rate of Infants <i>under</i> 1 year per 1,000 births, from <i>Measles</i> ...	...	...	...	...	...	5·35	2·60	0·60	3·64	2·26	4·95	3·61	2·28	4·65	6·90	2·50	2·46	0·77	3·89	0·99
Death-rate of Infants <i>under</i> 1 year per 1,000 births, from <i>Whooping Cough</i> ...	...	...	...	...	...	3·42	7·30	5·73	4·30	5·05	7·35	2·78	5·50	5·20	5·17	4·10	3·70	6·65	0·60	3·1
Death-rate of Infants <i>under</i> 1 year per 1,000 births, from <i>Respiratory Diseases</i> ...	...	...	...	...	...	20·8	24·6	27·0	24·4	25·2	26·4	20·4	22·2	30·6	24·9	28·0	27·0	20·9	27·6	26·9
Death-rate of Infants <i>under</i> 1 year per 1,000 births, from <i>Tuberculosis</i> (all forms)	...	...	...	...	...	3·53	3·71	4·65	4·55	4·25	2·40	3·20	3·88	3·88	3·40	2·60	1·54	2·63	1·80	1·36

Prior to 1911 figures uncorrected for cases belonging to other districts.

* “ *All Congenital Causes* ” includes Syphilis, Debility at Birth, Injury at Birth, Atelectasis, Accidents of Childbirth, and congenital defects.

† “ *Diarrhœa and all other Digestive Diseases* ” includes Diarrhœa, Dysentery, Epidemic or Zymotic Enteritis, Thrush, Starvation, Want of Breast Milk, Rickets, Sore Throat, Quinsy, Diseases of the Stomach, Enteritis, Cirrhosis of Liver Obstruction of Intestine, Peritonitis, and other Diseases of the Digestive System.

DEATH RATE PER 1,000 POPULATION FROM “ THE PUERPERAL STATE.”

	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920
Population ...	216,150	216,275	217,010	217,862	255,160	257,113	259,082	261,065	263,064	265,077	267,261	269,193	271,295	271,523	278,107	278,107	278,107	278,107	275,009	286,061
Deaths ...	31	39	20	30	23	19	16	27	27	24	29	29	23	22	28	37	18	21	29	27
Rate ...	0·14	0·18	0·09	0·14	0·09	0·07	0·06	0·13	0·12	0·09	0·19	0·17	0·13	0·08	0·10	0·13	0·06	0·08	0·10	0·09

For particulars of deaths, as to causes, etc., see Tables on pages 40A and 44A.

DEATHS OF CHILDREN UNDER SCHOOL AGE.

The mortality rate among children, aged 1 to 5 years, in 1920, per 1,000 births in the years 1916 to 1919 (inclusive) was 12·4. The corresponding figure for each of the previous four years was as follows :—1919, 20·2; 1918, 16·3; 1917, 16·0; 1916, 15·9.



**Report of the
Maternity and Child Welfare Medical Officer.**

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I submit herewith my first report of the work done by the Maternity and Child Welfare Branch of your department during the year 1920.

MIDWIVES ACT, 1902.

29 midwives notified the Local Supervising Authority of their intention to practise, and of these 19 hold the Certificate of the Central Midwives Board or of a recognised hospital, and 10 were on the register before the passing of the Midwives Act. During the year, two midwives holding the C.M.B. Certificate removed to other towns. Two of the midwives are subsidised, one of whom is in her second year.

Inspections.—120 visits were paid by the Superintendent of Midwives (Miss G. B. Cameron) to certified midwives at their homes for the purpose of inspecting their midwifery bags and appliances, and to see that the necessary records of their work were being satisfactorily kept; also to investigate cases of ophthalmia neonatorum, of septicæmia, or of any other abnormality occurring in their practices. The results of these visits were generally satisfactory; the midwives comply with all requirements to the best of their ability. 9 midwives underwent disinfection, after being in contact with patients suffering from puerperal septicæmia. In addition 352 visits were paid to midwives' cases, usually at the request of the midwives, on account of some abnormal condition. Handywomen are still active, but on investigation it was found that they had been employed in emergency cases only.

Births attended by Midwives.—2,621 live births and 69 still-births were attended by midwives during the year, these figures shewing an increase of 29 in the former, and a decrease of 8 in the latter number. Midwives attended 31% of the total births in the city.

Lectures to Midwives.—35 weekly meetings were held in the Health Department. At these meetings, subjects of interest to the midwives were discussed and the midwives were encouraged to talk over any difficulties that arose in the course of their duties. In addition the Northumberland and Durham Midwives' Association held 8 meetings, and local doctors lectured on interesting and instructive subjects. Close co-operation and harmony exists between the practising midwives and the Health Department, and the midwives and health visitors are always willing to assist the mothers in their difficulties.

Notices to the Local Supervising Authority from Midwives who have sent for medical help. The following are the details:—

FOR MOTHERS				<i>During Puerperium—</i>			
<i>During Pregnancy—</i>				Rise of Temperature ...			
Varicose Veins	...	...	6	Eclampsia	...	...	4
Ante partum Hæmorrhage			3	Mastitis	...	...	1
Abortions	...	...	3	Stomach Trouble	...	...	4
			—	Chest Affections	...	...	6
			12				—
							24
				Total calls for Mother	...	...	125
							—
<i>During Labour—</i>				FOR CHILD			
Uterine Inertia	...	...	41	Immaturity	...	...	11
Malpresentations	...	...	7	Prematurity	...	...	32
Contracted Pelvis	...	...	5	Cyanosis	...	...	21
Retained Placenta	...	...	5	Congenital Defects	...	...	6
Complicated Breech	...	...	3	Convulsions	...	...	6
Post Partum Hæmorrhage			5	Ophthalmia Neonatorum	...	...	21
Ruptured Perineum...	...	...	21	Icterus Neonatorum...	...	...	3
Syncope	...	...	2				—
			—				100
			89				—
				GRAND TOTAL	...	...	225
							—

This is a decrease of 14 on the number for 1919. The percentage of midwives' cases where a doctor is called in is 8·3%.

Claims were received for *Payment of Doctors' Fees* in the following cases:—

			£	s.	d.	£	s.	d.
For forceps delivery	...	23 cases	@	2	2	0		
„ post partum hæmorrhage	3	„	@	1	1	0		
„ other illnesses of mother	2	„	@	0	10	0	and	0 7 0
„ ophthalmia neonatorum	1	„	@	0	18	0		
„ other illnesses of child	1	„	@	0	4	0		
Total cases	30.	Total payments	£53	8	0.			

13 claims for *Payment of Midwives' Fees* were received and paid, and these amounted to £11 17s. 6d. All were cases of poverty, wives of unemployed men, and not in receipt of maternity benefit.

Ophthalmia Neonatorum.—The total number of cases notified was 116; of these 100 were visited, the remainder being cases in Hospital or admitted to Hospital from other districts and notified. This is an increase of 16 on last year's numbers.

Doctors attended at birth in 49 cases.

Midwives „ „ 21 „

Union Hospital attended 4 „

Maternity Hospital attended 31 „

Born in other districts ... 9 „

In Nursing Homes ... 2 „

Total in the City ... 116

To the 100 visited cases, 398 visits were paid, and the ultimate results were:—

Recovered 91, slightly defective in one eye 3, slightly defective in both eyes 3, lost the sight in one eye 1, and 2 died.

Puerperal Septicæmia.—12 cases of puerperal septicæmia were notified. Doctors attended 5 of the cases, midwives 6 cases, and 1 was admitted to hospital from another district and notified. 10 cases were visited; of these 6 recovered and 4 died.

NOTIFICATION OF BIRTHS ACTS.—5,496 births were notified in 1920 as against 8,433 births registered, or 65%.

The following table shows from whom they were received:—

Notified by	Living Births.	Still-Births.
Medical Practitioners ...	1,373	38
Certificated Midwives ...	2,621	69
Maternity Hospital ...	1,416	57
Union Hospital ...	69	...
Parents ...	17	...
	5,496	164

Still-Births.—Of the total notifications of births received under the Act, still-births were in the following proportion:— 1909, 4·1%; 1910, 3·9%; 1911, 4·1%; 1912, 3·2%; 1913, 3·4%; 1914, 3·6%; 1915, 3·4%; 1916, 3·6%; 1917, 3·1%; 1918, 3·3%; 1919, 3·5%; and 1920, 3%.

The following details apply to the 106 still-births attended by midwives and the Maternity Hospital which were visited:—

Duration of Pregnancy.—Under 7 months, 8 or 7·54%; at 7 months, 16 or 15·09%; at 8 months, 19 or 17·92%; and at full time, 63 or 59·43%.

Presentation.—Vertex, 53 or 49·91%; breech, 10 or 9·43%; footling, 7 or 6·60%; unknown, 36 or 33·96%.

Supposed Cause of Still-Births.—Ill health of mother, 37 or 34·90% of cases; accident previous to birth in 23 cases, or 21·69%; malpresentations, etc., in 22 cases, or 20·75%; and other causes in 24 cases, or 22·64%.

In 39 instances it was the 1st child; in 15 instances the 2nd child; in 14 the 3rd child; in 12 the 4th; in 4 the 5th; in 22 the 6th or more.

This was the first still-born child in 94 cases; the 2nd in 6; the 3rd in 1; the 4th in 1; and the 5th or more in 4 cases.

Health Visitors.—There are 19 Health Visitors and the chief Health Visitor (who is also Superintendent of Midwives) working in the different parts of the City. The babies are visited frequently and regularly up to their first birthday, and then at less frequent intervals up to 5 years. Expectant mothers are visited and advised; cases reported from the Royal Victoria Infirmary are followed up in their homes; measles, pneumonia, influenza and diarrhoea cases are visited and revisited, and where necessary in these cases the Health Visitors help the mothers by giving practical demonstrations

of how the doctor's instructions should be carried out. The visits of the Health Visitors are always appreciated and welcomed by the mothers, whose confidence is won by tactful and friendly advice and help.

During the year 1920, 7,790 births were visited, and a total number of 37,438 re-visits were paid to these births; 19,759 visits were paid to children over one year and under 5 years; 1,083 visits were paid to expectant mothers; 455 visits to cases notified by the Royal Victoria Infirmary; and 2,005 special visits; in all a total of 68,530 visits to infants were paid. In addition the following visits were made:—2,485 primary and 2,063 subsequent to measles; 794 primary and 977 subsequent to pneumonia and influenzal pneumonia; 79 primary and 92 subsequent to diarrhoea; making a total of 6,490 visits to notified infectious cases, and a grand total of 75,020 visits. 326 infants left the district, the names and addresses of these children being sent to the Medical Officer of Health for the district in which the parents went to reside.

6,160 infants born in 1919 and on the visiting list of the department were due to attain their first year of age in 1920, Of these 509 left the City, 72 removed leaving no address and so could not be traced, and 750 died.

The following figures are therefore based on the 4,829 who completed their first year of life plus the 750 who died, making in all 5,579.

Influence of Housing Conditions.—843 births occurred in one-roomed dwellings and of these 167 died, a mortality rate of 198·1 per 1000; 2,155 births occurred in two-roomed dwellings and of these 291 died, a mortality rate of 135·03 per 1000; 1,529 births occurred in three-roomed dwellings and of these 171 died, a mortality rate of 111·8 per 1000; and 1,052 births occurred in houses of more than three rooms and of these 121 died, a mortality rate of 116 per 1000.

During the 13 years 1908-1920, 38,125 births have been under the observation of the Health Visitors and of these 4,880 died, a mortality rate of 128 per 1000 births.

The following is the analysis :—

YEAR.	LIVING IN							
	1 Room.		2 Rooms.		3 Rooms.		4 Rooms.	
	Births.	Deaths.	Births.	Deaths.	Births.	Deaths.	Births.	Deaths.
1908	247	32	515	57	312	32	13	2
1909	339	53	694	86	168	32	29	3
1910	536	62	723	68	51	4	7	2
1911	462	68	794	79	77	6	20	1
1912	465	48	746	60	110	6	25	1
1913	241	40	348	28	91	3	17	3
1914	245	36	375	31	90	11	25	3
1915	631	104	2,140	306	1,416	144	692	74
1916	611	121	2,333	343	1,584	180	756	85
1917	730	104	2,199	284	1,349	150	776	84
1918	607	90	2,018	270	1,285	144	766	83
1919	664	111	2,056	306	1,358	188	810	102
1920	843	167	2,155	291	1,529	171	1,052	121
Totals ...	6,621	1,036	17,096	2,209	9,420	1,071	4,988	564
Death rate per 1000 births.	156·4		129·1		113·6		133·1	

Cleanliness of the 5,579 homes visited :—

Good in 4,647 cases or 83%.

Fairly Good in 825 cases or 15%.

Bad in 107 cases or 2%.

Employment of Mothers.—

Before confinement only 206 or 3·6% of the mothers worked, as compared with 8·5% in 1919.

After confinement 164 or 2·9% of the mothers were working, as compared with 6·6% in 1919.

46 or 6% of the mothers who lost their babies worked before confinement.

Health of the Mothers whose babies survived their first year.—

It was good in 4,263 cases, or in 88%.

It was fairly good in 454 „ „ 9·5%.

It was bad in 105 „ „ 2·5%, and 7 Mothers died.

Health of Mothers whose babies died during their first year.

It was good in	571 cases, or in 76%.
It was fairly good in	127 „ „ 17%.
It was bad in	51 „ „ 7%.

Deaths of Babies.—750 children died during the first year of their life, and of these 379 or 50% died within the first month. The cause of death in 303 of the latter cases, or 80%, was given as “prematurity,” or “debility from birth.”

Of the total deaths under one year of age :—

199 or 26·5%	were due to bronchitis or pneumonia.
70 „ 10%	„ „ „ convulsions.
90 „ 12%	„ „ „ enteritis.

Previous Deaths in families where a baby died during 1920. In 77% of the cases, this was the first death; in 10% it was the second; in 6% it was the third; in the remaining 7% more than three children had previously died.

Attendant at time of birth of the 750 children who died.—Doctors, 45%; midwives, 35%; Maternity Hospital, 20%.

Feeding of the 5,579 children under observation :—

	Breast.	Mixed.	Only Artificial
Children who survived first year; feeding during first month	90%	4·5%	5·5%
Children who died during first year; feeding during first month	82%	8%	10%
Children who survived first year; feeding at twelve months	3·5%	40·5%	56%
Children who died during first year; feeding at time of death	69%	9·0%	22%
Feeding of 90 children who died from enteritis	33%	21%	46%

Illegitimacy.—There were 348 illegitimate children born, and of these 45 died, a death rate of 129 per 1,000, as compared with 101 for all births.

Deaths among notified and unnotified births. 70% of infant deaths were notified births; the remainder were not notified.

Sex.—There were 4,412 male children born, and of these 527 died. There were 4,021 female children born, and of these 358 died, a death rate among male children of 119 per 1,000, and a death rate among female children of 89 per 1,000.

WELFARE CENTRES.

General.—In Newcastle, the foundation of Maternity and Child Welfare was laid in 1901, when the Council appointed Health Visitors, whose duties were mainly devoted to furthering the welfare of the City's children, and the present superstructure was built on this foundation by the Newcastle Mothers' and Babies' Welfare Society.

In 1907 this far-seeing and public-spirited body equipped and opened a Centre in Wharncliffe Street, and Maternity and Child Welfare has since then flourished in the City, the numbers attending the Centres increasing year by year.

In April, 1920, the voluntary Society's portion of the scheme was taken over by the City Council, and this was followed forthwith by the appointment of a full time Medical Officer to take immediate control of the now somewhat extensive machinery for the promotion of Maternity and Child Welfare in the town.

Premises.—The premises in which the 9 Centres are located are situated in Dalton Street, Byker; Clara Street, Benwell; Barrack Road; Dunn's Cottages, Spital Tongues; Wharncliffe Street, Scotswood Road; City Road Girls' Club; Wesley Street, Shieldfield; Portland Street, Mill Lane; Bottlehouse Street, St. Peters; and a Medical Clinic is held at every Centre one day a week.

Ante-natal Sessions.—Special Sessions are held weekly for ante-natal and post-natal mothers and these are conducted by Dr. Mabel Campbell, ante-natal clinics being held every week at 3 centres, viz., Byker, Wharncliffe Street, and Barrack Road.

The number of women attending these clinics has been gradually increasing, and is added to by cases sent by the

Medical Officers at the other Welcomes, by the Health Visitors, the Midwives, the Royal Infirmary Almoner, the Citizens' Service League, and the Pre-Maternity Department of the Maternity Hospital, etc.

The effort of the Medical Officer is to make the clinics a centre of education rather than of treatment. The expectant mother will attend for obvious illness in herself, as well as the mother suffering from some post-natal condition, but there is still a great deal of teaching required before the claim of the unborn child is realised.

Therefore, the objects of the clinics are mainly two-fold. In the first place, the expectant mother learns something of how to look after herself during her pregnancy, and secondly, she is taught the necessity of making efficient arrangements for the safe care of herself and her child at the time of her confinement.

For this reason at each Centre the names of the doctors practising in the district are known; a list of the midwives in the town is kept, and also of the various institutions associated with work of this kind, and the hours of attendance at them.

Only minor ailments are treated at the Centres. Where cases require medical care they are always referred to their own medical attendant or to Hospitals. A very real advantage has been gained by having Corporation beds at the Maternity Hospital, as these can be occupied by pre-maternity cases as well as by women at the time of delivery.

During the stay of these patients in hospital, the system of obtaining Home Helps through the Citizens' Service Society has been valuable, as also where an ailing, expectant, or nursing mother, not being a hospital case, has had rest and treatment at home through the assistance of one of these helps.

The original Voluntary Committee of the Infant Welfare Society still co-operates by paying for cases requiring treat-

ment at Convalescent Homes. The "Rose Joicey" Home at Whitburn, and Miss Taylor's Home, "Ellwood," at Barrasford, have also helped in this way.

Before the end of 1920, a certain amount of free dried milk was given to necessitous cases in the later months of pregnancy, as also to undernourished mothers, in order to promote breast feeding.

ANTE-NATAL AND POST-NATAL ATTENDANCES. JULY TO DECEMBER, 1920.

MONTH.	BYKER.		WHARNCLIFFE ST.		BARRACK ROAD.	
	Ante-Natal.	Post-Natal.	Ante-Natal.	Post-Natal.	Ante-Natal.	Post-Natal.
July	7	8	7	7	4	7
August	4	23	12	10	13	8
September	10	12	17	16	16	8
October	29	26	16	16	16	14
November	22	12	13	8	22	10
December	29	12	8	22	19	4
Total	101	93	73	79	90	51

Total Ante-Natal Attendances ... 264 in 6 months.

Total Post-Natal ,, ... 223 ,,

487 ,,

Total number of Sessions for Ante-

Natal and Post-Natal Cases ... 74

Average Attendance 6.58

Sessions for Children.—Morning Sessions, in addition to the existing afternoon Sessions, were instituted at eight of the nine Centres, and these, together with the three Ante-Natal Sessions, made a total of 20 Medical Sessions a week, presided over by one full-time and two part-time Medical Officers, assisted by the Health Visitors and the Voluntary Workers.

In the month of November, 56 Medical Sessions were held, and there was an average attendance of 45 children with their mothers at each.

On Centre day the Sessions commence at ten o'clock in the morning, and are carried on, with an interval for dinner, till the last mother is seen in the late afternoon. On admission every child is stripped and its clothes are put into a special individual receptacle—usually a wire basket—where they remain till required for re-dressing. The child is then weighed and its weight is recorded on the child's chart, which is filed at the Centre, and on the weight card which is given to the mother to keep, and which she presents to the Health Visitor at each attendance. From the latter card parents are able to see and take an interest in the progress of their children.

Weekly Weighing.—This is an essential part of Infant Welfare, and 22,596 weighings were done at the nine Centres during the year. It is important, because any deviation from the normal health of a young child can be reflected by its weight and cessation of gain, or actual loss of weight may be the first and only sign that the child is, or has been ill; and illness of a very trifling and transitory nature is apparently sufficient to stop, temporarily, the growth of a child.

Especially is this the case with those conditions which derange the intestinal tract and set up diarrhoea, hence the paramount importance of correct and careful feeding and the advisability of a weekly weighing of all infants and young children.

After the child is weighed it is wrapped loosely in a blanket and sent into the consulting room to be examined by the doctor. Here, particulars of the child's condition are recorded on the chart, and the mother is advised, where necessary, as to the feeding and rearing of her child. Should the latter be found to be suffering from any illness, or shew any deviation from the normal, the mother is told so and is

given a written recommendation on the printed form to either, and preferably, her own doctor, or to one of the hospitals, for treatment.

SUMMARY OF WORK AT THE CENTRES IN 1920.

CENTRE.	Ante-natal.		Post-natal.		New Babies.			Individuals, including New Babies.			Attendances.			*Medical Sessions (April to December).	
	Attend-ances.	Individ-uals.	Attend-ances.	Individ-uals.	Under 12 m'ths	Over 12 m'ths	Total.	Under 12 m'ths	Over 12 m'ths	Total.	Under 12 m'ths	Over 12 m'ths	Total.	No.	Average
Barrack Rd. ...	67	45	28	22	346	65	411	362	117	479	2128	596	2724	61	38
Benwell ...	11	7	1	1	291	68	359	360	93	453	2218	526	2744	45	41
Byker ...	81	50	56	33	304	57	361	342	115	457	1969	626	2595	47	37
City Road ...	...	...	...	...	270	103	373	337	154	491	1991	748	2739	55	40
Portland St. ...	...	...	...	...	223	90	313	266	128	394	1466	790	2256	31	43
Shieldfield ...	...	...	...	...	258	42	300	274	70	344	1931	395	2386	33	39
Spital Tongues ...	...	...	...	...	116	12	128	141	45	186	1048	368	1416	31	33
St. Peter's ...	3	3	...	...	265	146	411	303	172	475	1743	1132	2875	59	40
Wharnccliffe St.	44	34	45	33	288	91	379	310	162	472	1907	954	2861	64	36
Totals ...	206	139	130	89	2361	674	3035	2695	1056	3751	16461	6135	22596	426	39

*No definite record of the Medical Sessions was kept by the Voluntary Committee prior to the Corporation taking over the Centres.

Owing to the large number of children brought into the Consulting Room for examination, it is only possible to do a minimum amount of clerical work, and for this reason the table of pathological conditions found is incomplete and is not therefore submitted. The following are significant details of 4,254 children :—

- 2,191 only were breast fed.
1,364 were artificially fed.
723 were insufficiently nourished.
62 had adenoids and enlarged tonsils.
5 had hare-lip and cleft palate.
7 ,, congenital heart disease.
18 ,, birth marks.
361 ,, some skin affection.
- 281 had rickets.
21 ,, syphilis.
285 ,, umbilical hernia (rupture.)
26 ,, inguinal hernia.
5 ,, scrotal hernia.
51 ,, conjunctivitis.
27 ,, blepharitis.
109 ,, discharging ears.
6 ,, wry neck.

Instruction.—Health Talks are given by the Health Visitors at each Centre once a week. They are upon some subject of interest to the mothers respecting the health of their children, and are listened to attentively and appreciatively. They are brief and couched in simple language, and are a valuable adjunct to the general educative nature of the scheme.

Sewing days are held either once or twice a week at each centre, and paid teachers are present to instruct the mothers in the making of suitable garments for themselves and their children.

Feeding.—Experience has proved that skilled advice is required by the majority of the mothers attending our Welfare Centres, and it is usually necessary on the subject of feeding.

Correct dieting may be said to constitute another essential part of the work, and it leads to the conclusion that were it possible to get every infant fed from the outset of its life as it should be fed, many of the devastating ills that infant flesh is now heir to would completely disappear and the effects of others would be greatly minimised.

The records of 4,254 children attending our Centres recently examined state that:—

2,191 or 51·5% were entirely breast fed ;
 699 or 16·4% were partly breast fed and partly
 artificially fed ; and
 1,364 or 32% were entirely artificially fed.

Practically, this means that only one out of every two of these children is being fed naturally, and that one out of every three is being fed entirely unnaturally and usually on the dried or prepared milk of an animal wholly different from the baby's mother. If it were a fact, as these statistics would appear to imply, that out of every two of these mothers—mostly young women and often with their first babies—one is unable to suckle her infant, it would be alarming, but my experience convinces me that such is not the case.

Artificial Feeding, at present being resorted to in a wholesale manner, is in my opinion unnecessary in the large majority of cases, and in many instances it results in grave harm to the child's health and much painful suffering.

There are difficulties, however, in the path of the dietetic reformer, and one of the greatest is due to the extraordinary fact that many mothers who would take no notice of amateur advice on how to repair their sewing machines will listen to and put into practice the advice that any amateur may give them on how to feed their babies, which are much more complicated machines.

Want of knowledge and the too ready willingness of young mothers to accept the precepts of those incompetent counsellors on the subject of children's diet who abound in every town, are the chief difficulties with which we have to contend, and much of our time is spent in undoing mischief done, and in educating mothers in the necessity and advantages of feeding their infants naturally.

In those instances where the poor condition of the mother, or some other cause affecting her health, is found to be retarding the progress of a breast-fed child, every effort is made to improve the mother's health before resorting to artificial feeding.

Details of the dried milk distribution are given later.

Illegitimate Children to the number of 82 were brought to the Centres during the year. These babies were considered as precious as other babies and received the same consideration. The mothers were encouraged to feed their children naturally, and were given all available help for doing so. It is hoped that this attitude will eventually lessen the high mortality existing among these children.

Toddlers.—Efforts are being made to get mothers to pay more attention to the health of their children of toddling age, among whom a good deal of deterioration has been noticed ;

this is probably due to the fact that many mothers will bring their children regularly to the Centres so long as they are infants and wholly dependant on them, but as soon as the children reach the age of from 12 to 18 months and begin to toddle about, the care and attention previously bestowed upon them is somewhat relaxed, and the children are allowed to some extent "to look after themselves."

They are often no longer brought to the Centres, or only at long intervals, and are allowed much more freedom in their diet, frequently getting fed "on what we get ourselves," quite irrespective of the fact that at this age children still require a diet peculiar to themselves.

Attendances.—From January to December, 3,751 children were brought to the nine Centres, and they made a total of 22,596 attendances.

While these figures may be considered satisfactory for the facilities now at hand, it should nevertheless be noted that the number of children brought to the Centres forms only a small proportion of those who ought to be brought but who are not. The more Centres that exist and the larger the number of Sessions at each Centre, the larger will be the attendance, and the greater will be the proportion of the City's children under regular observation and advice at the City's Welfare Centres. And that attendance at the Centres is of the greatest importance is amply proved by the common experience of those engaged in Infant Welfare Work, which is that regular gain in a child's weight and progress in its general condition are the results of regular attendance at the Centres, whereas irregular and infrequent attendants often display irregular or unsatisfactory progress.

And it is remarkable that should a child who has been brought regularly to the Centres be kept away for any length of time it is nearly always found on re-examination to have deteriorated both in weight and general condition.

The contention is further justified by the fact that while the general infantile mortality in the City is 101, that among the Centre children between April and December was only 20·9.

It is true that there is a fallacy in the comparison inasmuch as the Centres do not deal with all children from birth to death, nevertheless the disparity in the figures is a striking one, and may justifiably be held to be in the Centre's favour.

In his Annual Report to the Minister of Health on "The State of the Public Health," Sir George Newman speaking of a slightly higher mortality occurring among children attending one of the Metropolitan Borough's Centres, says :—" And even if the death rate among the Centre babies were doubled, it would still be remarkably low."

But additional facilities mean additional expenditure, and for this reason they will not be available until some future period. It is to be hoped, however, that the development of Infant Welfare Work will not be held up for any longer period than the present necessity for economy demands, because in the end there is nothing cheaper from a national point of view than a healthy man or a healthy woman, but neither can be built up on a rickety or dyspeptic baby any more than a good house can be erected on a bad foundation.

Innovations.—During the year new record charts, diet sheets, recommendations to own doctor or to hospitals, beating-up letters, and posters for distribution on the public hoardings, were instituted and have all been found convenient and helpful.

New Centres.—It was proposed to open New Centres in the Scotswood and Walker areas of the City, where they are badly needed, and suitable premises were sought for and found in both districts. The necessity for economy, however, unfortunately compelled postponement of any further extension of the scheme, and the opening of these new Centres is in abeyance for the present.

Home Helps.—A scheme for the employment of Municipal Home Helps was drawn up and submitted to the Committee but—for the above reason—it was also not proceeded with.

Requirements in this connection during the year were met by the Citizen's Service Society, who readily placed their staff of Home Helps at our disposal when called upon.

DRIED MILK.—During the year 20,639 lbs. of dried milk were given and 86,526 lbs. were sold at cost price. In both cases the financial position of the applicant was enquired into before the privilege was granted, and each was required to conform to a scale which was practically as follows :—

For free milk a weekly income of approximately not more than 5/- per head after paying rent.

And for cost-price milk a weekly income of not more than 10/- or 15/- per head according to the size of the family.

As far as possible each case was considered on its merits, the above scale being used as a guide. In the cases where free milk was given the majority belonged to the very poor, and were either the families of unemployed or destitute men, or unskilled labourers working part time. Others were illegitimate children where the granting of free milk not only assisted in the nourishment of the child but also freed the mother and enabled her to seek for work. Poor widows with young children formed another group. Milk was only given at the discretion of the Medical Officers, and it was given to mothers to assist in the nourishment either of themselves or their children.

The women who got it for their own use were either nursing or expectant mothers, and the welfare of the actual or prospective infant was the aim in view.

For children it was given to replace breast feeding at weaning time or to supplement other nourishment.

The quantity given has been 6-lbs., which is a month's supply and which yields, when suitably diluted, a little more than a pint of milk a day. This is a convenient quantity and is the amount sanctioned by the Ministry of Health to Local Authorities receiving its grant.

When confined strictly to suitable cases and given in quantities and dilutions applicable to the age and physical condition of the child for whom it is intended, nothing but good resulted from the distribution of this dried milk, and it was especially useful during the critical diarrhoea months of the summer, but as indicated above its use is sometimes attended by abuse. Instead of accepting it as a substitute for, and a vast improvement on, the dirty germ-laden wet milk upon which children were fed (and sometimes killed) in days gone by, scores of mothers have welcomed it and regarded it as a substitute for and an improvement on their own milk, which in most cases it is not and was never meant to be.

The following table shews the quantity of dried milk distributed each month during the year:—

MONTH.				FREE.	COST PRICE.
January	...	...	...	1,890 lbs.	6,628 lbs.
February	...	...	...	1,980 „	6,144 „
March	...	...	...	1,926 „	6,690 „
April	...	...	...	1,670 „	7,535 „
May	...	...	...	2,020 „	7,243 „
June	...	...	...	1,996 „	6,631 „
July	...	...	...	1,860 „	8,640 „
August	...	...	...	1,356 „	7,200 „
September	...	...	...	1,360 „	8,808 „
October	...	...	...	1,728 „	8,035 „
November	...	...	...	1,214 „	7,690 „
December	...	...	...	1,639 „	5,282 „
Total				20,639 lbs.	86,526 lbs.

MATERNITY ACCOMMODATION.

Maternity accommodation is as deficient in Newcastle as it is in most other towns, and a proposal to add a new wing to the New Bridge Street Maternity Hospital is at present under consideration. In these days of house shortage and overcrowding much inconvenience and some danger threatens poor mothers in the critical hours of their confinements, and to meet the necessity for institutional treatment which a certain proportion of the latter class inevitably requires, the Council makes an annual grant of £1,000 to the *Maternity Hospital* funds, in return for which ten beds are constantly placed at our disposal. Full use has been made of this privilege during the year. The Council also subscribes £500 per annum towards the upkeep of *The Hostel* in Osborne Road, which provides a home for the unmarried mother before her confinement, and shelters and cares for both mother and baby till the latter is six or nine months old.

The Perfect Maternity and Child Welfare Scheme should care for all mothers from the earliest day of their pregnancy till their children are weaned, and for all children from birth till they attain the age of five years, when they will normally come under the care of the School Medical Officers. The nine months before birth and the succeeding five years are the foundation upon which the future individual is built, and unless children at these ages are normally healthy it is difficult to see how the adolescent and adult can be. These ante-natal months and post-natal years are the responsibility of the Maternity and Child Welfare Authorities, and the benefit to the Nation's health resulting from a well-directed and organised scheme is incalculable.

In England and Wales, in 1917, 25,044 babies died before they were one month old, and in 1920, 817 children died in Newcastle alone before they were one year old.

It is my convinced opinion that Maternity and Child Welfare could and would have saved many of these children if it had had the opportunity to do so.

In 1913 the School Medical Officers in Newcastle found physical defects in 32·2% of all children examined, and in 1920 they treated 12,278 cases at the School Clinics. Examination of the list of conditions found indicates that many of the diseases requiring treatment might have been avoided had the victims been under regular medical supervision prior to attaining school age. Child Welfare, by coming into contact with pathological conditions in young children at the earliest possible moment, has a unique opportunity for having these conditions immediately, and perhaps permanently, cured, and so robbing dispensaries, hospitals, and sanatoria of prospective patients. In conclusion, therefore, I suggest that money expended on Maternity and Child Welfare is money well spent.

I am, Sir,

Your obedient servant,

A. F. G. SPINKS, M.D.

*Health Department,
Town Hall,
Newcastle-upon-Tyne.*

REPORTS OF THE
RESIDENT MEDICAL OFFICER OF THE
INFECTIOUS DISEASES HOSPITAL
AND THE TUBERCULOSIS OFFICER.

III. INFECTIOUS DISEASE.

FEVERS, FOOD POISONING.
CITY HOSPITAL FOR INFECTIOUS DISEASES.
TUBERCULOSIS, DISINFECTION, BACTERIOLOGY.

INFECTIOUS DISEASES.

NUMBER OF CASES PER 1,000 POPULATION IN 1920.

DISTRICT.	ATTACK-RATE PER 1,000 POPULATION.						
	Small-pox.	Typhus.	Scarlet Fever.	Diphtheria.	Enteric Fever and Continued Fever.	Puerperal Fever.	Erysipelas.
England and Wales ...	0·01	0·00	3·19	1·86	0·08	0·08	0·43
96 Great Towns (including London).	0·01	...	3·45	1·75	0·07	0·10	0·47
NEWCASTLE-UPON-TYNE ...	...	...	4·46	1·21	0·03	0·04	0·86
Hull	0·00	0·00	2·95	2·04	0·07	0·06	0·46
Leeds	...	...	3·04	1·97	0·06	0·12	0·57
Bradford	...	...	3·8	1·7	0·2	0·2	0·5
Sheffield	...	...	1·74	1·20	0·05	0·14	0·49
Manchester	...	...	4·87	1·20	0·07	0·19	0·50
Salford	0·00	...	4·7	1·4	0·28	0·17	0·57
Liverpool	0·01	...	4·1	2·1	0·05	0·09	0·6
Nottingham	...	...	2·26	2·6	0·05	0·05	0·5
Leicester	0·00	0·00	3·85	1·91	0·06	0·07	0·51
Stoke-on-Trent	0·00	0·00	4·26	1·38	0·04	0·12	0·63
Birmingham	...	...	6·13	1·94	0·01	0·16	0·42
Cardiff	...	...	6·3	1·7	0·02	0·03	0·31
Bristol	...	...	3·76	2·57	0·12	0·09	0·62
Portsmouth	...	...	1·89	2·91	0·11	0·02	0·33
† London	0·00	0·00	5·02	3·05	0·09	3·7*	0·57
Gateshead	0·01	...	6·31	0·72	0·02	0·03	0·31
South Shields	...	...	1·26	0·29	0·09	0·03	0·24
Tynemouth	...	...	2·31	0·83	0·16	0·06	0·54
Sunderland	...	...	3·25	0·51	0·03	0·07	0·54
Middlesbrough	0·10	0·00	2·78	1·32	0·03	0·10	0·10
† Northumberland	...	...	4·98	1·53	0·12	0·06	0·62
† Durham	0·009	...	5·29	1·43	0·06	0·04	0·44

† Administrative County. * Per 1000 births.

DEATHS (CORRECTED) FROM NOTIFIABLE INFECTIOUS DISEASES
AND NON-NOTIFIABLE ZYMOTIC DISEASES, EXCLUSIVE OF TUBERCULOSIS.

WARD.	Diphtheria.	Erysipelas.	Scarlet Fever.	Typhus Fever.	Enteric Fever.	Cerebro-Spinal Fever.	Polio-myelitis	Measles	Puerperal Fever.	Small-pox.	Whooping Cough.	Zymotic Diarrhoea (under 2 years of age).
St. Nicholas'	...	...	1	...	...	...	...	1	...	...	...	...
*St. Thomas'	1	...	...	...	...	1	...	2	...	...	...	2
St. John's	2	...	2	...	...	...	...	2	...	...	3	7
Stephenson	1	1	2	...	...	1	...	4	...	...	1	7
Armstrong	4	...	2	...	...	...	...	2	...	...	2	6
Elswick ...	1	1	3	...	...	...	...	...	...	...	1	2
Westgate	1	...	2	...	...	...	...	2	...	...	2	2
†Arthur's Hill	...	...	1	...	...	...	...	...	1	...	...	3
Benwell...	5	...	...	...	1	...	...	1	1	...	7	9
Fenham...	1	...	...	...	...	...	...	...	2	...	3	1
All Saints'	...	1	2	...	...	1	...	6	...	...	6	14
St. Andrew's	2	1	...	...	...	...	...	2	...	...	4	5
Jesmond...	...	...	...	...	...	...	...	1	...	...	...	2
Dene ...	3	...	...	...	...	...	...	1	...	...	...	1
Heaton ...	1	...	...	...	...	...	...	4	...	...	...	...
Byker ...	1	1	1	...	...	...	...	5	1	...	2	6
St. Lawrence	1	...	1	...	1	1	...	8	...	...	3	8
St. Anthony's	...	1	...	...	...	1	...	1	...	...	8	16
†Walker ...	...	...	3	...	...	...	...	...	...	...	3	10
City ...	24	6	20	...	2	5	...	42	5	...	45	101

* Includes Royal Victoria Infirmary and Fleming Memorial Hospital for Sick Children. †Includes Union Workhouse and Wingrove Hospital.
‡ Includes City Hospital for Infectious Diseases.

For particulars of deaths from **Tuberculosis** see pages 94 to 100.

NOTIFIED CASES OF INFECTIOUS DISEASE.

EXCLUSIVE OF TUBERCULOSIS.

AGES OF CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1920.
(TABLE II. OF MINISTRY OF HEALTH.)

NOTIFIABLE DISEASE.	AT AGES—YEARS.									TOTAL (ALL AGES).	
	Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 45.	45 to 65.	65 and up- wards	Ages not known	1920.	1919.	
Diphtheria (including Membranous Croup)...	8	107	166	39	22	2	1	3	348	320	
Erysipelas	7	2	20	30	81	81	21	4	246	173	
Scarlet Fever	9	311	827	88	37	2	...	8	1282	716	
Typhus Fever	...	...	...	...	...	...	...	...	...	...	
Enteric Fever	...	1	2	2	5	...	...	...	10	10	
Epidemic Cerebro- Spinal Meningitis }	1	2	2	...	...	...	...	...	5	17	
Acute Poliomyelitis ...	1	...	1	...	...	...	...	...	2	5	
Acute Polio-Encephalitis	...	...	...	...	...	...	...	...	...	1	
Encephalitis Lethargica	...	...	2	3	3	...	...	...	8	1	
Measles and Rubella ...	200	905	1512	54	27	3	1	25	2727	7624	
Puerperal Septicæmia ...	...	...	...	3	9	...	...	...	12	6	
Ophthalmia Neonatorum	116	...	...	...	...	...	...	...	116	100	
Pneumonia	139	200	144	108	166	78	29	11	875	618	
Malaria	...	...	...	6	23	2	...	1	32	98	
Dysentery	...	...	...	...	9	...	...	...	9	10	
Trench Fever	...	...	...	...	...	...	...	1	1	...	
Relapsing Fever	...	...	1	...	...	...	...	...	1	...	
TOTALS	481	1528	2677	333	382	168	52	53	5,674	9,699	

WARD DISTRIBUTION OF INFECTIOUS DISEASES.

(TABLE II. OF MINISTRY OF HEALTH.)

WARD.	Diphtheria.	Erysipelas.	Scarlet Fever.	Enteric Fever.	Cerebro-Spinal Fever.	Poliomyelitis.	Acute Polio-Encephalitis.	Encephalitis Lethargica.	Measles.	Rubella.	Puerperal Fever.	Ophthalmia Neonatorum.	Acute Primary Pneumonia.	Acute Influenzal Pneumonia.	Malaria.	Dysentery.	Trench Fever.	Relapsing Fever.	TOTAL.
St. Nicholas'...	6	2	15	...	...	...	...	...	29	5	...	3	20	...	...	...	...	...	80
St. Thomas' ...	24	17	95	1	3	...	...	1	124	14	...	12	37	7	4	2	...	...	341
St. John's ...	14	8	46	...	1	...	...	...	152	3	1	6	93	6	2	...	...	...	332
Stephenson ...	15	26	108	1	...	...	...	...	138	10	...	9	49	4	2	...	...	...	362
Armstrong ...	32	17	127	...	...	1	...	...	48	20	2	4	37	1	3	1	...	...	293
Elswick ...	11	13	64	...	...	...	...	...	53	21	1	7	17	5	...	...	...	1	193
Westgate ...	25	16	99	2	...	1	...	...	110	36	...	3	77	5	1	...	...	...	375
Arthur's Hill...	11	9	36	1	...	...	...	...	84	39	1	4	31	4	1	...	...	...	221
Benwell ...	35	20	169	3	...	...	...	...	103	32	1	8	96	4	2	2	...	...	475
Fenham ...	18	9	84	...	...	...	...	1	77	40	2	4	17	2	1	1	1	...	257
All Saints' ...	10	19	31	...	...	...	...	1	244	4	2	8	47	2	3	...	...	...	371
St. Andrew's...	12	12	24	...	...	...	...	...	137	9	...	11	44	5	3	1	...	...	258
Jesmond ...	9	8	73	...	...	...	...	1	92	31	...	...	13	...	...	...	...	...	227
Dene ...	15	5	33	...	...	...	...	1	131	27	...	1	15	3	1	1	...	...	233
Heaton ...	23	6	47	...	...	...	...	1	151	11	...	2	24	5	1	...	...	...	271
Byker ...	17	18	40	1	...	...	...	...	281	4	1	15	31	4	5	...	...	...	417
St. Lawrence	16	20	55	...	...	...	...	...	249	10	...	9	35	...	1	1	...	...	396
St. Anthony's	17	11	40	...	1	...	...	...	124	7	...	8	46	8	1	...	...	...	263
Walker ...	38	10	96	1	...	...	...	2	66	11	1	2	75	6	1	...	...	...	309
City	348	246	1282	10	5	2	...	8	2393	334	12	116	804	71	32	9	1	1	5,674

For particulars of cases of **Tuberculosis**, see special section, pages 93, 94 & 99.

WARD INCIDENCE OF INFECTIOUS DISEASES. EXCLUSIVE OF TUBERCULOSIS.

NOTIFIABLE DISEASES—Cases per 1,000 Population.																	DEATHS per 1,000 Pop.		
WARD.	Diphtheria.	Erysipelas.	Scarlet Fever.	Typhus Fever.	Enteric Fever.	Cerebro-Spinal Fever.	Polio-myelitis.	Acute Polio- encephalitis.	Encephalitis Lethargica.	Measles (including Rubella).	Puerperal Fever.	Smallpox.	Ophthalmia Neonatorum.	Pneumonia.	Malaria.	Dysentery.	Measles (including Rubella).	Whooping Cough	Zymotic Diarrhoea (under 2 years of age).
St. Nicholas'	1.59	0.53	3.99		...	...	...		...	9.0	...		0.79	5.32	...	...	0.26	...	...
*St. Thomas' ...	1.61	1.14	6.39		0.06	0.20	...		0.06	9.3	...		0.81	2.98	0.27	...	0.13	...	0.13
St. John's ...	0.87	0.49	2.84		...	0.06	...		...	9.6	0.06		0.37	6.12	0.12	...	0.12	0.18	0.43
Stephenson ...	0.76	1.32	5.46		0.05	...	...		...	7.5	...		0.45	2.68	0.10	...	0.20	0.05	0.35
Armstrong ...	1.94	1.03	7.71		...	...	0.07		...	4.1	0.12		0.24	2.31	0.18	0.06	0.12	0.12	0.36
Elswick ...	0.83	0.98	4.80		...	...	...		...	5.5	0.08		0.52	1.65	...	...	...	0.07	0.15
Westgate ...	1.55	0.99	6.15		0.12	...	0.06		...	9.1	...		0.19	5.09	0.06	...	0.12	0.12	0.12
†Arthur's Hill	0.91	0.74	2.99		0.08	...	...		...	10.2	0.08		0.33	2.91	0.08	...	...	...	0.25
Benwell ...	1.89	1.08	9.12		0.16	...	...		...	7.3	0.05		0.43	5.40	0.11	0.11	0.5	0.38	0.49
Fenham ...	1.55	0.77	7.22		...	...	...		0.08	10.9	0.17		0.34	1.63	0.09	0.09	...	0.26	0.08
All Saints' ...	0.53	1.02	1.60		...	...	...		0.05	13.3	0.11		0.43	2.63	0.16	...	0.32	0.32	0.75
St. Andrew's	0.91	0.82	1.82		...	...	...		...	11.1	...		0.84	3.73	0.26	0.08	0.15	0.30	0.38
Jesmond ...	0.77	0.68	6.27		...	...	...		0.08	10.5	...		...	1.11	...	...	0.09	...	0.17
Dene ...	1.16	0.39	2.59		...	...	...		0.08	12.3	...		0.07	1.39	0.08	0.08	0.07	...	0.08
Heaton ...	1.41	0.37	2.87		...	...	...		0.06	9.9	...		0.12	1.77	0.06	...	0.24	...	...
Byker ...	0.92	0.98	2.16		0.05	...	...		...	15.5	0.05		0.81	1.90	0.27	...	0.27	0.11	0.33
St. Lawrence	0.85	1.06	2.91		...	...	...		...	13.7	...		0.48	1.85	0.05	0.05	0.42	0.16	0.42
St. Anthony's	1.02	0.66	2.40		...	0.06	...		...	7.9	...		0.48	3.24	0.06	...	0.06	0.48	0.96
†Walker ...	2.24	0.60	5.66		0.06	...	...		0.11	4.6	0.06		0.12	4.78	0.06	...	...	0.18	0.59
City ...	1.22	0.86	4.48	...	0.03	0.017	0.007	...	0.03	9.5	0.04	...	0.40	3.06	9.11	0.03	0.15	0.16	0.35

*Includes Royal Victoria Infirmary and Fleming Memorial Hospital for Sick Children. †Includes Union Workhouse and Wingrove Hospital.
‡Includes City Hospital for Infectious Diseases, Walker Gate.

For Particulars of **Tuberculosis** see table on page 99.

HOUSEHOLDS AFFECTED WITH INFECTIOUS DISEASES, EXCLUSIVE OF TUBERCULOSIS AND MEASLES.

DISEASES.	HOUSEHOLDS WITH						Mili- tary or Naval Cases	Public Insti- tutions *	TOTAL CASES.
	Single Cases	2 Cases each	3 Cases each	4 Cases each	5 Cases each	6 Cases each			
Diphtheria (including Membranous Croup)	240	33	3	2	...	...	6	25	354
Erysipelas ...	214	6	...	...	...	...	...	18	246
Scarlet Fever ...	849	115	33	7	2	1	...	60	1282
Enteric (or Typhoid) Fever ...	9	...	...	...	...	...	...	1	10
Epidemic Cerebro- Spinal Meningitis...	4	...	...	...	...	...	...	1	5
Poliomyelitis ...	2	...	...	...	...	...	...	...	2
Encephalitis Lethar- gica ...	7	...	...	...	...	...	...	1	8
Puerperal Fever ...	11	...	...	...	...	...	...	1	12
Ophthalmia Neona- torum ...	116	...	...	...	...	...	...	...	116
Pneumonia ...	804	24	...	...	...	...	...	20	875
Malaria ...	32	...	...	...	...	...	...	...	32
Dysentery ...	8	...	...	...	...	...	...	1	9
Trench Fever ...	1	...	...	...	...	...	...	...	1
Relapsing Fever ...	1	...	...	...	...	...	...	...	1
TOTAL ...	2301	178	36	9	2	1	6	128	2953

* See below.

Schools and Infectious Disease.—It was not found necessary to close any school during the year.

PUBLIC INSTITUTIONS AND INFECTIOUS DISEASE.

The following notifications were received during the year:—

INSTITUTIONS. &c.	Diphtheria.	Erysipelas.	Scarlet Fever.	Enteric Fever.	Cerebro-Spinal Meningitis.	Measles and Rubella.	Puerperal Fever.	Pneumonia.	Influenza.	Dysentery.	Encephalitis Lethargica.	TOTAL.*
Royal Victoria Infirmery ...	3	6	12	1	1	...	...	1	...	1	1	26
Fleming Memorial Hospital, North Road ...	8	2	5	...	...	18	...	...	...	...	...	33
Throat and Ear Hospital ...	...	1	...	...	...	...	...	...	...	...	...	1
Workhouse ...	...	8	...	...	...	...	...	14	...	...	...	22
Home for Incurables ...	...	...	1	...	...	...	...	...	...	...	...	1
City Hospital for Infectious Diseases—(Staff) ...	7	...	16	...	...	1	...	4	7	...	...	35
Deaf and Dumb Institution	2	...	6	...	...	...	...	...	...	...	...	8
Girls' Orphanage ...	...	...	9	...	...	...	...	...	...	...	...	9
Industrial School ...	...	...	3	...	...	...	...	...	...	...	...	3
Maternity Hospital ...	...	1	...	...	...	...	1	1	...	...	...	3
Blind Institution ...	2	...	5	...	...	...	...	...	...	...	...	7
TOTAL ...	22	18	57	1	1	19	1	20	7	1	1	148

* Does not include any cases belonging to the City which could properly be assigned to their homes elsewhere.

MILK SUPPLY IN RELATION TO INFECTIOUS DISEASES.

The source of the milk supply was ascertained in every case of fever and diphtheria. In no case was there reason to suspect that the milk was responsible for the conveyance of infection.

There were in the City before the War 714 small general shops retailing milk, few of them being fit places for the purpose. This number now stands at 299 owing to the action of the Food Control Committee in referring all applicants for licence to the Health Department, which was thus enabled to weed out the great majority of the undesirables.

32 cases of Scarlet Fever and 16 cases of Diphtheria occurred at public places of various kinds, as shewn in the following tables:—

SCARLET FEVER.

General Dealer ... 5	Drapery Agent ... 3	Farm 1
Insurance Office ... 1	Dressmaking ... 4	Doctors 3
Soldiers' Home ... 1	Public House ... 3	Fried Fish Business 2
Social Club ... 1	School 1	Laundry 1
Boarding House ... 1	Dentist 3	Bakery 1
		House Agent ... 1

DIPHTHERIA.

Offices 1	Bakers 2	General Dealer ... 2
Hotel 1	Public House ... 2	Dentist 1
Boarding House ... 5	Dairy Farm ... 1	Dressmaking ... 1

SCARLET FEVER.

Notifications of 1,282 cases were received during the year, and there were 20 deaths, which is equivalent to a mortality of 1·6 per cent. The type of disease was mild on the whole.

DIPHTHERIA.

348 cases were notified during the year, and 24 died, a case mortality of 6·9 per cent.

Antitoxin was distributed free to medical practitioners in the City as follows:—

Number of medical practitioners who made application for Antitoxin... ..	45
Number of phials of Antitoxin supplied	227
Number of cases of Diphtheria notified	348
Number of cases of Diphtheria removed to Hospital	286
Number of Hospital cases in which Antitoxin was injected prior to admission	61

The fatality of the disease in recent years is shown in the subjoined table.

Year.	DIPHTHERIA CASES. (All Forms.)	
	Number.	Case Mortality (per cent).
1909	546	12·7
*1910	443	9·0
1911	507	7·5
1912	501	6·6
1913	368	7·6
1914	362	7·7
1915	275	9·5
1916	272	10·3
1917	226	14·6
1918	250	9·2
1919	320	6·9
1920	348	6·9

* Antitoxin first distributed gratis April, 1910.

Particulars of the type of the disease as noted in cases sent to hospital will be found later in the section dealing with the City Hospitals.

MEASLES AND RUBELLA.

2,727 cases (including 334 of Rubella) were notified, and there were 42 deaths (corrected) in 1920, representing a death rate of 0·15 per 1,000 population, as compared with 0·37 in 1919.

DEATHS, 1920.

MONTH.	YEARS OF AGE.							TOTAL.
	0-1.	1-2.	2-3.	3-4.	4-5.	5-10.	Over 10.	
January ...	1	1	1	...	...	1	...	4
February ...	...	4	1	...	...	...	...	5
March ...	2	1	...	...	...	...	...	3
April ...	...	2	...	1	...	...	...	3
May ...	...	2	...	...	...	...	...	2
June ...	1	...	...	...	...	...	...	1
July ...	1	1	...	...	...	...	...	2
August ...	...	1	...	...	...	...	...	1
September ...	...	...	...	...	...	...	...	...
October ...	...	1	1	...	...	...	...	2
November ...	2	1	1	...	...	1	...	5
December ...	1	6	3	2	...	1	1	14
Total ...	8	20	7	3	...	3	1	42

The following table shows the deaths in the various wards, and at different age periods:—

			Under 3 months.	3 and under 6 months.	6 and under 9 months.	9 and under 12 months.	1 and under 2 years.	2 and under 3 years.	3 and under 4 years.	4 and under 5 years.	5 and under 10 years.	Over 10 years.	TOTALS.
St. Nicholas'	...	...	...	...	...	...	1	...	...	...	...	...	1
St. Thomas'	...	...	...	1	...	...	1	...	...	...	...	...	2
St. John's	...	...	...	...	...	...	1	...	...	...	1	...	2
Stephenson	...	...	...	...	1	...	2	1	...	...	...	...	4
Armstrong	...	...	...	...	...	...	1	1	...	...	...	...	2
Elswick	...	...	...	...	...	...	...	...	...	...	...	...	...
Westgate	...	...	...	...	...	1	...	...	1	...	...	...	2
Arthur's Hill	...	...	...	...	...	...	...	...	...	...	...	...	...
Benwell	...	...	...	...	...	1	...	...	...	...	...	...	1
Fenham	...	...	...	...	...	...	...	...	...	...	...	...	...
All Saints'	...	...	...	...	1	1	3	1	...	...	...	...	6
St. Andrew's	...	...	...	...	...	...	1	1	...	...	...	...	2
Jesmond	...	...	...	...	...	...	...	...	...	...	1	...	1
Dene	...	...	...	...	...	...	1	...	...	...	...	...	1
Heaton	...	...	...	...	...	1	2	...	...	...	...	1	4
Byker	...	...	...	...	...	...	3	1	...	...	1	...	5
St. Lawrence	...	...	...	...	...	1	3	2	2	...	...	...	8
St Anthony's	...	...	...	...	...	...	1	...	...	...	...	...	1
Walker	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	...	...	1	2	5	20	7	3	...	3	1	42

Each Health Visitor visited and revisited the cases occurring in her district. By this arrangement each case is seen immediately on receipt of the notification, and advice is given regarding the nursing and isolation of the patient, special care being taken to impress on the mother the importance of good ventilation and warmth, and the necessity for the great cleanliness of the mouth and eyes of the patient. The cases are kept under supervision until they recover, and should subsequent cases occur in the family they are recorded.

Measles Cases, including Rubella, notified during 1920—

Cases notified by Medical practitioners	...	...	2,088
„ found „ Health Visitors	...	...	589
„ notified „ Parents	...	...	38
„ „ „ the School Medical Officer	...	...	12
			2,727

The cases occurred in the following wards:—

			Measles.			Rubella.
St. Nicholas'	...	...	29	...	...	5
St. Thomas'	...	...	134	...	...	14
St. John's	...	...	152	...	...	3
Stephenson	...	...	138	...	...	10
Armstrong	...	...	48	...	...	20
Elswick	...	...	53	...	...	21
Westgate	...	...	110	...	...	36
Arthur's Hill	...	...	84	...	...	39
Benwell	...	...	103	...	...	32
Fenham	...	...	77	...	...	40
All Saints	...	...	244	...	...	4
St. Andrew's	...	...	137	...	...	9
Jesmond	...	...	92	...	...	31
Dene ...	...	...	131	...	...	27
Heaton	...	...	151	...	...	11
Byker ...	...	...	281	...	...	4
St. Lawrence	...	...	249	...	...	10
St. Anthony's	...	...	124	...	...	7
Walker	...	...	66	...	...	11
			2,393			334

The following were the ages of the cases :—

Under 1 year	...	...	200
From 1—5 years	...	...	905
„ 5—15 years	...	...	1,512
„ 15—25 years	...	...	54
„ 25—45 years	...	...	27
„ 45—65 years	...	...	3
Over 65 years	...	...	1
Unknown	...	...	25
			2,727

Of the total number of measles cases notified, 2,485 (or 91 per cent.) were visited by the Health Visitors, and 2,063 revisits were paid.

It was found that there were 1,939 households affected, and these households lived in the following dwellings :—

Number occurring in 1 roomed dwellings				...	...	227
„	„	2	„	...	...	671
„	„	3	„	...	...	547
„	„	4	„	...	...	349
„	„	5	„	...	...	55
„	„	6	„	...	...	90
						1,939

Isolation.—The isolation of the 2,485 visited cases was found to be good in 37 per cent. ; fair in 38 per cent. ; bad in 25 per cent.

Medical Attendance.—In 96 per cent. of the cases visited a doctor was found to be in attendance.

Condition of Patient.—In 86 per cent. of the cases visited the disease ran a normal course, bronchitis or

pneumonia developed in the remainder, and 1·5 per cent. of the total cases died.

Attendance at Schools.—37 per cent. of the children affected had previously attended school, and in 25 per cent. of the cases no one from the affected households had been attending any school.

The following were the ages of the children (visited) suffering from measles :—

Under 1 year	...	...	194
„ 2 years	...	...	301
„ 3 years	...	...	256
„ 4 years	...	...	283
„ 5 years	...	...	328
„ 6 years	...	...	484
Over 6 years	...	...	639
			2,485

WHOOPIING COUGH.

45 deaths occurred from Whooping Cough. The particulars are as follows :—

MONTH.	YEARS OF AGE.						TOTAL.
	0—1	1—2	2—3	3—4	4—5	5—10	
January ...	...	...	...	...	...	...	...
February ...	2	2	...	1	...	1	6
March ...	6	5	1	...	...	...	12
April ...	2	1	...	1	1	...	5
May ...	4	...	...	1	...	...	5
June ...	4	1	2	...	...	...	7
July ...	3	...	...	...	...	1	4
August ...	...	...	...	...	...	...	...
September ...	1	...	1	...	...	...	2
October ...	1	...	...	...	...	...	1
November ...	...	...	...	...	...	...	...
December ...	3	...	...	...	...	...	3
Whole Year ...	26	9	4	3	1	2	45

The death rate in 1920 was equivalent to 0·16 per 1,000 population, as compared with 0·03 in 1919.

ENTERIC FEVER.

10 cases were notified during the year, one of which died, while one death was transferred from another district, giving a death rate of 0·007 per 1,000 population, and a case mortality of 10·0 per cent.

Two of the cases had shellfish, bought in a shop in Percy Street, but infection was not suspected. One had dysentery whilst in the Army, and one was in the Navy during the War, but was not inoculated.

DIARRHŒA.

There were in all 131 deaths from the disease, equal to a death rate of 0·46 per 1,000 population, and this number included 101 deaths of children under two years of age.

FOOD POISONING.

One death from suspected food poisoning occurred in July. Tinned salmon was thought to be the medium, but no evidence could be obtained, although *Baccillus Aertryche* Newport was isolated from post mortem material.

TYPHUS.

No case of this disease occurred during the year.

SMALLPOX.

There were no cases of smallpox in Newcastle.

The following are the particulars, courteously furnished by the Clerk to the Guardians, of infant **Vaccination** in Newcastle during recent years. (Walker, which belongs to the Tynemouth Rural area for registration purposes, is not included).

Year.	Births Registered.	Successful Vaccinations.	Unsuccessful Vaccinations.	Exemption Certificates.	
				Number.	Percentage to Total Births.
1905	7,958	7,264	27	65	0·8
1906	7,721	6,733	28	92	1·2
1907	7,610	6,702	16	94	1·2
*1908	7,747	6,414	20	449	5·8
1909	7,180	5,667	30	517	7·2
1910	7,023	5,532	22	683	9·7
1911	6,604	5,002	24	767	11·6
1912	6,715	4,625	18	982	14·6
1913	6,874	4,441	7	1,173	17·0
1914	7,023	4,230	11	1,499	21·2
1915	7,116	4,487	1	1,485	20·9
1916	7,117	4,405	9	1,509	21·2
1917	6,166	3,688	5	1,478	24·0
1918	6,092	3,488	15	1,362	22·4
1919	6,131	3,405	8	1,582	25·8
1920	7,955	4,403	45	2,074	26·7

* Vaccination Act, 1907, came into force.

The *Public Vaccinators and Vaccination Officers* for the various districts of the City are :—

Dene, Heaton and Byker Municipal Wards :—

Dr. F. R. H. LAVERICK, Woodbine Villa, Heaton Road.

Deputy—Dr. T. BOWER, 35, Heaton Road.

St. Anthony's and St. Lawrence Municipal Wards :—

Dr. RICHARD DAGGER, 1, Rothbury Terrace.

Deputy—Dr. L. S. DAVISON, 19, Heaton Road.

Walker District :—

Dr. T. J. RYAN, Welbeck Road.

Deputy—Dr. WM. HUTCHINSON, Welbeck Road.

All Saints', St. Nicholas', St. Andrew's, Jesmond, and St. Thomas' Municipal Wards :—

Dr. FRANK HAWTHORN, 10, Ellison Place.

Deputy—Dr. O. W. OGDEN, 4, St. Mary's Terrace.

Fenham, Arthur's Hill, Westgate and St. John's Municipal Wards :—

Dr. JAMES DON, 1, Grove Street.

Deputy—Dr. JAS. HUDSON, 42, Crossley Terrace.

Stephenson, Elswick, Armstrong and Benwell Municipal Wards :—

Dr. G. D. NEWTON, 8, Regent Terrace.

Deputy—Dr. J. A. BRAND, 186, Westmorland Road.

Wingrove Hospital :—

Dr. G. P. HARLAN.

Vaccination Officers :—

Western—W. J. WHITE, 16, Wingrove Avenue

Eastern—WM. GARRETT, 34, Harbottle Street.

ERYSIPELAS.

246 cases of this disease were notified and there were 6 deaths.

PUERPERAL SEPTICÆMIA.

Inquiries were made concerning 12 cases. 5 of the cases were attended by doctors.

INFLUENZA AND PNEUMONIA.

These diseases accounted for 558 deaths as against 1,165 last year.

Total deaths at age periods.

Under 5 years.	5-15	15-25	25-45	45-65	65 and over.	TOTAL.
234	31	31	96	106	60	558

As will be seen from the above figures, 106, or 19·0 per cent., of the deaths occurred between the years of 45 and 65, and 234 or 41·9 per cent. below the age of 5 years.

PNEUMONIA.

A total number of 875 cases of pneumonia, including influenzal-pneumonia, were notified.. The ward distribution was as follows :—

St. Nicholas' 20	Brought Forward 512
St. Thomas' 44	All Saints' 49
St. John's 99	St. Andrew's 49
Stephenson 53	Jesmond 13
Armstrong 38	Dene 18
Elswick 22	Heaton 29
Westgate 82	Byker 35
Arthur's Hill 35	St. Lawrence 35
Benwell 100	St. Anthony's 54
Fenham 19	Walker 81
Carried Forward 512	875

Of that number 794 or 90·7 per cent. of the cases were visited by the department.

It was found that of these 794 visited cases, 677 or 85·26 per cent. were primary pneumonia, 61 or 7·68 per cent. were cases of influenzal-pneumonia, and 56 or 7·05 per cent. were cases of pneumonia following other diseases.

Sex—63 per cent. of the cases were males.

Ages— of the 794 cases visited :—

Under 1 year...	... ..	135
1-5 years	... ..	194
5-15 years	... ..	137
15-25 years	... ..	95
25-45 years	... ..	149
45-65 years	... ..	61
and over 65 years	... ..	23
		794

Of these, 131 were school children.

Housing—120 cases occurred in 1 roomed dwellings, 277 cases occurred in 2 roomed dwellings, 196 cases occurred in 3 roomed dwellings, and 201 cases occurred in more than 3 roomed dwellings.

Type of House—401 cases occurred in flats, 279 cases in tenements, and 114 in self-contained houses.

Isolation—The isolation was good in 49·49 per cent. of the cases, fair in 4·78 per cent. of the cases, and bad in 45·71 per cent. of the cases.

Ventilation was considered good in 74·8 per cent. of the cases.

Previous History—

There was a previous history of Measles			in 198 cases.
„	„	„	Whooping Cough in 96 cases.
„	„	„	Influenza in 102 cases.
„	„	„	frequent winter
			Coughs and Colds in 504 cases.
There had been Previous attacks of Pneumonia			in 93 cases.
„	„	„	Bronchitis in 17 cases.
„	„	„	Tuberculosis in 19 cases.

Deaths—169 or 21 per cent. of the visited cases of pneumonia died.

VENEREAL DISEASES.

Syphilis was certified as the cause of death in 19 cases.

The work of the treatment clinic has been continued successfully. 2,819 old and new cases attended 30,526 times as out-patients. 1,635 new cases accounted for 1,145 in-patient days. Of the new cases 671 were syphilis, 666 gonorrhœa, 24 soft chancre, and 274 conditions, other than venereal. Approximately three-fourths were males.

3,639 doses of salvarsan substitutes were administered to out-patients, and 51 to in-patients.

3,119 Wasserman reactions were carried out at the College of Medicine, and 495 microscopical examinations of pathological material were made at the College and 226 at the treatment clinic. The irrigation stations for males and for females in connection with the clinic have been in full use during the year under report.

ACUTE POLIOMYELITIS AND EPIDEMIC CEREBRO-SPINAL MENINGITIS.

NUMBER OF CASES.																														
TOTAL No. OF CASES.	0-1 Year.						1-5 Years.						5-10 Years.						10-15 Years.						15 Years and Over.					
	Male.			Female.			Male.			Female.			Male.			Female.			Male.			Female.			Male.			Female.		
	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.
2	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
*5	1	1	...	...	...	...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
8	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	4	2	...	2	1	...
CASES REMOVED TO ISOLATION HOSPITAL.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
* This includes 1 outside case, which occurred in a public institution.																														

CITY HOSPITAL FOR INFECTIOUS DISEASES.

Accommodation.

NAMES AND SITUATION OF HOSPITALS.	TOTAL AVAILABLE BEDS.
City Hospital for Infectious Diseases, Walker Gate (including Phthisis Pavilions, 62 Beds) ...	294
Smallpox and Isolation Hospitals, Town Moor ...	172

YEAR.	Population of the City.	Number of Beds at City Hospital for Fever Cases.	Total Admissions (exclusive of Phthisis).	Percentage of Notified Cases Admitted.
1890	182,866	104	219	21·3
1900	213,039	104	290	38·6
1909	263,064	172	1,090	78·0
1910	265,077	172	912	83·0
1911	267,261	172	1,110	83·1
1912	269,193	172	1,542	86·4
1913	271,295	172	1,286	88·3
1914	271,523	172	1,835	78·9
1915	278,107	232	1,886	90·5
1916	278,107	232	1,380	87·0
1917	278,107	232	1,303	87·5
1918	278,107	232	1,245	87·5
1919	275,099	232	1,370	84·3
1920	286,061	232	1,710	86·4

CITY HOSPITAL FOR INFECTIOUS DISEASES.

82A

Diseases Admitted—1920.

		CASES ADMITTED PROVED AFTER OBSERVATION TO BE :																															
CASES SENT IN AS :—		Number.	Scarlet Fever.	Diphtheria.	Diphtheria Carriers.	Enteric Fever.	Measles.	Rubella.	Pneumonia.	Other Respiratory Diseases.	Epidemic Cerebro-Spinal Meningitis.	Other Forms of Meningitis.	Encephalitis Lethargica.	Varicella.	No Appreciable Disease.	Erythema.	Tonsillitis.	Skin Infections.	Vincent's Angina.	Diseases of Digestive System.	Diseases of Nervous System.	Erysipelas.	Puerperal Fever.	Pertussis.	Nephritis.	Mumps.	Influenza.	Septic Infections.	Contact of Infectious Disease.	Tetanus.	Ophthalmia Neonatorum.	Unclassified.	
Scarlet Fever	...	1118	1095	1	...	...	1	7	1	...	...	...	...	1	3	5	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Diphtheria	...	286	8	241	...	...	2	...	1	2	...	1	...	...	1	...	25	...	3	2	...	...	...	...	...	...	...	...	...	...	...	...	
Diphtheria Carriers	...	32	...	...	32	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Enteric Fever	...	22	...	...	...	11	...	...	7	...	...	...	1	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	
Measles	...	40	1	...	...	...	30	5	...	...	...	...	...	...	1	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Erysipelas	...	30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	26	...	...	...	...	...	...	...	...	...	...	
Typhus	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Puerperal Fever	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	
Rubella	...	10	1	1	...	...	3	3	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Pneumonia	...	58	...	...	...	...	...	...	51	4	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	
Epidemic Cerebro-Spinal Meningitis	...	19	...	...	...	...	...	...	2	1	6	6	1	...	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	
Varicella	...	16	...	...	...	...	...	...	...	...	...	...	...	14	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	
Pertussis	...	4	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	
Mumps	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...	
Other Respiratory Diseases	...	3	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diseases of Digestive System	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...	
Influenza	...	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	9	1	...	...	...	...	
Encephalitis Lethargica	...	6	...	1	...	...	...	...	...	...	...	1	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Other forms of Meningitis	...	2	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Contact of Infectious Disease	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	
Tetanus	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	
Ophthalmia Neonatorum	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	
Unclassified	...	33	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	5	...	...	...	...	...	...	...	...	5	...	...	...	...	21	
TOTALS		1710	1105	244	32	11	36	15	64	11	6	10	7	15	8	8	28	12	3	12	3	26	3	4	2	4	9	6	3	1	1	21	

CITY HOSPITAL, WALKER GATE.
(Fever Pavilions).

Admissions during the year—1,710.

The *average daily number* of patients in the hospitals was 166, exclusive of 72 cases of phthisis.

RATE PER CENT. OF CASES REMOVED TO HOSPITAL TO CASES NOTIFIED.

	1890	1895	1900	1905	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920
Scarlet Fever	18·4	33·0	35·0	50·1	84·5	83·8	88·0	90·6	81·4	91·3	94·5	91·9	99·3	88·0	85·7
Diphtheria	8·3	28·7	40·0	36·8	80·1	80·5	81·8	81·5	84·8	89·1	84·6	82·0	91·6	74·4	89·1
Enteric Fever	38·9	48·0	54·5	52·0	90·5	92·0	91·2	91·1	94·1	87·0	96·6	96·0	93·1	80·0	90·0
All cases of the above together with Continued and Typhus Fever, and Cerebro-Spinal Fever, &c.)	21·3	34·6	38·6	47·8	83·0	83·1	86·4	88·3	82·6	90·5	87·0	87·5	87·5	84·3	86·4

Diseases and Mortality Rates.

MORTALITY OF CASES TREATED IN HOSPITAL AS COMPARED WITH CASES NOT REMOVED DURING 1920.

DISEASE.	HOSPITAL.			NOT REMOVED.		
	Total Cases (Verified).	Deaths.	Case Mortality per cent.	Total Cases.	Deaths.	Case Mortality per cent.
Scarlet Fever	1105	17	1·5	184	4	2·2
Diphtheria	244	19	7·7	38	5	13·2
Enteric Fever	11	1	9·0	1	...	00·0

Expenses of Maintenance.—Of the patients admitted, the expense of maintenance is charged as under :—

	Cases.
To the Newcastle Sanitary Authority	1,678
To private guarantors	10
To the War Office and Admiralty	3
Tyne Port Sanitary Authority	19
TOTAL	1,710

ADMISSIONS AND DEATHS, 1920.

DISEASES.	ADMISSIONS.												DEATHS.													
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Scarlet Fever	121	128	110	93	70	61	59	73	98	113	104	75	1105	1	2	3	3	1	1	1	2	2	2	1	1	17
Diphtheria	29	19	14	26	23	19	21	12	18	21	22	20	244	6	2	2	2	4	1	1	2	2	3	3	1	19
Diphtheria Carriers,	1	1	1	2	4	3	2	3	2	5	6	2	32	3	1	1	1	1	1	1	1	1	1	1	1	1
Enteric Fever	3	2	1	2	1	1	2	1	1	4	1	4	11	1	1	1	1	1	1	1	1	1	1	1	1	4
Measles	13	6	4	3	1	1	1	1	1	2	1	5	15	1	1	1	1	1	1	1	1	1	1	1	1	4
Rubella	3	4	3	14	6	1	2	2	2	2	4	5	64	2	1	5	5	4	1	1	1	1	1	1	1	19
Pneumonia	7	2	3	1	1	1	1	1	1	2	1	1	11	2	1	1	1	1	1	1	1	1	1	1	1	2
Other Respiratory Diseases	2	2	1	1	1	1	1	1	1	2	1	1	6	1	1	1	1	1	1	1	1	1	1	1	1	2
Cerebro-Spinal Fever	1	1	1	2	1	1	1	1	1	2	1	1	10	1	1	1	2	1	1	1	1	2	1	1	1	2
Other forms of Meningitis	1	1	1	1	1	1	1	1	1	1	1	1	7	1	1	1	1	1	1	1	1	2	1	1	1	10
Encephalitis Lethargica	1	1	2	1	1	1	1	2	3	1	1	3	15	1	1	1	1	1	1	1	1	1	1	1	1	1
Varicella	2	4	1	1	1	1	1	1	7	1	1	1	8	1	1	1	1	1	1	1	1	1	1	1	1	1
No appreciable disease	2	1	3	2	1	1	1	1	1	1	1	1	26	1	1	1	1	1	1	1	1	1	1	1	1	1
Erysipelas	2	1	1	2	1	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1
Puerperal Fever	1	1	1	1	1	1	1	1	1	1	1	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1
Mumps	1	1	1	1	1	1	1	1	1	1	1	1	9	1	1	1	1	1	1	1	1	1	1	1	1	1
Influenza	1	1	3	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ophthalmia Neonatorum	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Tetanus	1	1	1	1	1	1	2	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Erythema	1	4	1	1	1	1	2	4	4	4	6	1	8	1	1	1	1	1	1	1	1	1	1	1	1	1
Tonsillitis	1	1	1	1	1	1	1	1	1	1	2	1	28	1	1	1	1	1	1	1	1	1	1	1	1	1
Vincent's Angina	1	1	1	1	1	1	3	3	1	1	2	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1
Diseases of Digestive System	1	1	1	1	1	1	1	1	1	1	3	1	12	1	1	1	1	1	1	1	1	1	1	1	1	1
Diseases of Nervous System	1	1	1	1	1	1	1	1	2	1	1	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1
Skin Infections	2	1	2	1	1	1	1	1	2	2	1	3	12	1	1	1	1	1	1	1	1	1	1	1	1	2
Pertussis	1	1	2	1	1	1	1	1	1	1	1	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1
Contacts of Infectious Diseases	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1
Septic Infections	2	1	1	1	1	1	1	1	1	1	1	1	6	1	1	1	1	1	1	1	1	1	1	1	1	1
Unclassified ...	1	5	3	1	1	2	2	1	2	3	3	1	23	1	1	1	1	1	1	1	1	1	1	1	1	1
TOTALS	194	180	171	153	116	95	101	103	139	169	158	131	1,710	14	4	12	13	11	2	3	3	4	5	4	7	82

Length of stay in Hospital of fatal cases.—Of the foregoing, the following *died within 24 hours of admission*—Diphtheria 7, Pneumonia 2, Tetanus 1, Meningitis 1, Measles 1. Total 12.

Present Death Rates compared with those of previous years.

RETURN SHEWING THE NUMBER OF CASES OF SCARLET FEVER, DIPHTHERIA, AND ENTERIC FEVER ADMITTED TO HOSPITAL, AND MORTALITY RATES PER CENT.
1890-1895.

YEAR.	NUMBER OF CASES ADMITTED TO HOSPITAL.			NUMBER OF DEATHS.			CASE MORTALITY, PER CENT.		
	Scarlet Fever.	Diphtheria.	Enteric Fever.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Scarlet Fever.	Diphtheria.	Enteric Fever.
1890	114	15	80	2	1	14	1·8	6·7	17·5
1891	110	10	67	5	6	6	4·5	60·0	8·9
1892	244	18	26	8	5	5	3·3	27·8	19·2
1893	202	15	49	5	2	6	2·5	13·3	12·2
1894	230	8	60	6	3	13	2·6	37·5	21·7
1895	319	41	75	10	10	21	3·1	24·4	28·0
	1,219	107	357	36	27	65	2·9	28·3	17·9
1912-1920.									
1912	1,018	383	82	34	27	13	3·3	7·0	15·8
1913	853	254	109	21	22	12	2·5	8·7	11·0
1914	1,404	251	86	43	21	13	3·1	8·4	15·1
1915	1,305	223	88	37	18	10	2·8	8·0	11·4
1916	677	210	57	19	23	8	2·8	10·9	14·0
1917	409	164	12	13	22	1	3·1	13·5	8·3
1918	381	205	26	9	13	2	2·6	6·3	7·8
1919	630	196	11	21	13	0	3·3	6·6	0·00
1920	1,105	244	11	17	19	1	1·5	7·7	9·0
	7,782	2,130	482	214	178	60	2·8	8·4	12·4

Cerebro - Spinal Fever. — 6 cases of cerebro-spinal fever were admitted during the year, of whom 2 died, a case mortality per cent. of 33·3.

Diphtheria.—Of the 244 patients in hospital 174 were faucial or pharyngeal cases, of whom 7 died, a case mortality per cent. of 4·0; 54 were laryngeal or tracheal cases, of whom 9 or 16·6 per cent. died, and 16 had involvement of the nasal passages of whom 3 or 18·6 per cent. died.

Tracheotomy was performed in 22 cases of diphtheria, and in 1 case of measles complicated with laryngeal diphtheria; of the 23 cases, 6 or 26·0 per cent., died.

The diagnosis of all cases were confirmed bacteriologically, either before or after admission to hospital.

The type of the disease was, on the whole, mild, the case mortality per cent. over the year being 7·7.

Antitoxin is administered to all cases of diphtheria admitted to hospital which have not received the remedy at home.

Bacteriological diagnosis is made in the great majority of cases before admission.

Mixed Infection.—79 patients sent into hospital, or 4 per cent., were found on admission to be suffering from two or more distinct infectious diseases, as follows:—

Scarlet Fever and Pertussis	...	...	...	4
Scarlet Fever and Diphtheria	...	...	...	15
Scarlet Fever and Measles	...	...	...	9
Scarlet Fever and Varicella	...	...	...	5
Scarlet Fever and Impetigo	...	...	...	5
Scarlet Fever and Scabies	...	...	...	2
Scarlet Fever and Ringworm	...	...	...	7
Scarlet Fever and Tuberculosis	...	...	...	3
Diphtheria and Scarlet Fever	...	...	...	14
Diphtheria and Measles	...	...	...	2
Diphtheria and Tuberculosis	...	...	...	2
Diphtheria and Scabies	...	...	...	1
Diphtheria and Impetigo	...	...	...	1
Diphtheria and Pertussis	...	...	...	1
Diphtheria, Measles and Impetigo	...	...	...	1
Diphtheria, Scarlet Fever and Pertussis...	...	...	...	1
Pneumonia and Scarlet Fever	...	...	...	1
Pneumonia and Pertussis	...	...	...	1
Pneumonia and Varicella	...	...	...	1
Epidemic Cerebro-Spinal Meningitis and Diphtheria	..			1
Varicella and Impetigo	...	...	...	1
Measles and Diphtheria	...	...	...	1
				79

Thus, 4·5 per cent. of the cases of scarlet fever were suffering from, or incubating, one or more additional infectious diseases on admission, and 9·4 per cent. of the cases of diphtheria.

Cross Infection.—During the year 19 patients developed a second infection in the wards, or 1·7 per cent. of the total admissions to hospital.

CROSS INFECTIONS.

Admitted as				Developed.				Number of Cases.
Scarlet Fever ...	...	...	...	Diphtheria ...	...	...	...	3
Do. ...	...	...	...	Scabies ...	...	...	...	3
Do. ...	...	...	...	Varicella ...	...	...	...	2
Diphtheria ...	...	...	...	Scarlet Fever ...	...	...	...	2
Do. ...	...	...	...	Varicella ...	...	...	...	6
Rubella ...	...	...	...	Scarlet Fever ...	...	...	...	1
Measles ...	...	...	...	Scarlet Fever ...	...	...	...	1
Pneumonia ...	...	...	...	Scarlet Fever ...	...	...	...	1
				TOTAL ...				19

“Return” Cases.—The following are details of the “return” cases of Scarlet Fever during the year:—

SCARLET FEVER.	“Infecting” Cases.		“Return” Cases.		“Infecting” Cases.
	No.	Per-centage.	No.	Per-centage.	Average Day of Disease when Discharged.
Total Admissions.					
1,105	37	3·3	39	3·5	41·5

SEASONAL OCCURRENCE.

Quarter.	Total Scarlet Fever Admissions.	“Infecting” Cases.		“Return” Cases.	
		No.	Percentage.	No.	Percentage.
January to March ...	359	12	3·3	12	3·3
April to June ...	224	6	2·6	6	2·6
July to September ...	230	7	3·0	8	3·4
October to December ...	292	12	4·1	13	4·4

Of the 37 “infecting” cases: (a) 15 had no complications or discharges whilst in hospital and remained “clean” after reaching home; (b) 7 had no complications whilst in hospital but developed discharges after reaching home; and (c) 15 were “dirty” cases whilst in hospital but were “clean” on discharge. In 8 of this last class, discharges re-commenced after reaching home.

Of the above classes, the average day of disease on discharge from hospital of the supposed infecting cases, and the period elapsing after that discharge and the onset of illness in the "return" case, were as follows:—

Class (a)—31·9 and 16·5 days.

„ (b)—37·7 „ 12·1 „

„ (c)—53·6 „ 10·1 „

In 4 instances "return" cases occurred although the supposed "infecting" cases had been detained in hospital for between 70 and 80 days

"RETURN" CASES FOR YEARS 1906-1920.

Year.	Total Scarlet Fever Admitted.	"Infecting" Cases.		"Return" Cases.	
		No.	Percentage.	No.	Percentage.
1906	442	7	1·6	10	2·3
1907	390	11	2·8	17	4·4
1908	283	4	1·4	5	1·8
1909	623	23	3·7	30	4·8
1910	465	18	3·9	20	4·3
1911	605	26	4·3	30	4·9
1912	1,018	47	4·6	52	5·1
1913	853	23	2·7	24	2·8
1914	1,404	78	5·6	96	6·8
1915	1,305	43	3·3	49	3·7
1916	677	22	3·3	24	3·5
1917	409	9	2·2	13	3·2
1918	381	13	3·4	14	3·6
1919	630	23	3·6	22	3·5
1920	1,105	37	3·3	39	3·5

Hospital and Home "Isolation" Compared.

In order to determine the relative liability to further infection subsequent to the first, in hospital and home-isolating households respectively, a careful record has been kept for eight years of the number of presumably susceptible persons in each invalided house, all, other than the original patient, below 12 years of age being so classed, and the proportionate incidence of secondary cases calculated.

Cases occurring within seven days of the "isolation" of the original case were not counted, as these probably acquired their infection before the influence of the "isolation" could be felt.

Cases occurring subsequently to the seventh day of "isolation" of the original case, and prior to the release of the latter, were classed as "incidental" infections.

Cases occurring within 28 days after the release of the original case from "isolation" were classed as "return" infections.

The following table shows the results obtained:—

YEAR	...	...	1913.		1914.		1915.		1916.		1917.		1918.		1919.		1920.		8 Years.	
Patient "isolated" at			Hospital	Home	Hospital	Home	Hospital	Home	Hospital	Home	Hospital	Home	Hospital	Home	Hospital	Home	Hospital	Home	Hospital	Home
"Susceptibles" in the homes of each class of patient			1131	53	1708	244	1462	86	800	8	509	17	450	20	726	47	1203	87	7989	562
"Incidental" infections			69	3	78	28	85	7	33	2	25	...	18	...	59	1	69	5	436	46
Percentage of "incidentals" to "susceptibles"			6.1	5.7	4.6	11.5	5.8	8.1	4.1	25.0	5.0	...	4.0	...	8.1	2.1	5.7	5.7	5.5	8.2
"Return" Infections			29	...	84	...	55	2	21	1	20	...	14	...	22	...	49	3	294	6
Percentage of "returns" to "susceptibles"			2.6	...	4.9	...	3.8	2.3	2.6	12.5	3.9	...	3.1	...	3.0	...	4.1	3.4	3.7	1.1
Total of "incidentals" and "return" infections			98	3	162	28	140	9	54	3	45	...	32	...	81	1	118	8	730	52
Percentage of this total to "susceptibles"			8.7	5.7	9.5	11.5	9.6	10.5	6.7	37.5	8.8	...	7.1	...	11.2	2.1	9.8	9.2	9.1	9.3

Thus it is seen, on eight years working, that there are fewer secondary cases in the households which sent their first case to hospital. This difference is the more marked when one analyses the relative housing accommodation of the two classes. Thus for every "susceptible" remaining at home among the hospital-isolating class, there were on an average at least 2.13 rooms, whereas in the home-isolating class there was an average of at least 5.37 rooms for each "susceptible," the home class having therefore more than twice the accommodation of the others, and being in fact selected on that account. If, therefore, home isolation were as efficient, case for case, as hospital, one would have expected to find a great preponderance in favour of the home class in the above evidence, instead of which the result is entirely the other way.

Average stay in Hospital during the last Thirteen Years.

Year.	All Cases.		Scarlet Fever.		Diphtheria.		Enteric Fever.		Other Diseases.	
	No.	Average Stay in Days.	No.	Average Stay in Days.	No.	Average Stay in Days.	No.	Average Stay in Days.	No.	Average Stay in Days.
1908	614	48.4	283	56.3	220	40.0	88	48.5	25	31.8
1909	1,090	49.2	623	54.3	334	41.6	56	45.9	78	42.8
1910	912	44.4	465	51.3	317	37.2	47	46.4	83	32.5
1911	1,110	45.6	605	50.5	375	41.9	68	44.4	62	20.2
1912	1,542	45.8	1,018	46.1	383	45.7	82	46.2	59	20.9
1913	1,286	45.5	853	47.6	254	47.9	109	43.4	70	19.6
1914	1,835	41.6	1,404	44.4	251	34.4	86	41.2	94	20.2
1915	1,886	41.3	1,305	47.1	223	35.6	88	44.0	271	17.2
1916	1,380	35.7	677	42.5	210	38.2	57	48.8	436	22.3
1917	1,303	33.9	409	46.5	164	43.5	12	59.8	718	24.0
1918	1,245	32.1	381	45.2	205	46.6	27	52.3	632	18.7
1919	1,370	33.8	630	41.5	196	54.8	11	39.2	533	16.9
1920	1,710	32.4	1,105	35.0	244	44.8	11	57.5	350	16.7

Bacteriological Laboratory, City Hospital.

The following examinations were made in connection with the patients in the fever wards:—

Swabs for Diphtheria Bacilli	...	...	1,606
Sputum. for Bacillus Tuberculosis	...	...	294
Other Examinations	...	...	18
TOTAL ...			1,918

Smallpox and Isolation Hospitals, Town Moor.

These Hospitals were in use from January to July, 409 Scarlet Fever convalescents from the City Hospital being admitted.

TUBERCULOSIS.

Report of the Tuberculosis Medical Officer.

TO THE MEDICAL OFFICER OF HEALTH.

SIR.

Herewith I beg to submit my report on the work of the Tuberculosis Section during the year 1920.

Most of the statistical tables with comparative figures have been omitted on grounds of economy in printing.

There was an increase in the number of notifications of tuberculosis as compared with the previous year and a less marked increase in the number of deaths; the corrected death rate was 0·06 per thousand in excess of that of 1919, and that was entirely due to pulmonary tuberculosis.

As in previous years there were many more deaths from phthisis among males than females, and as the disease is apparently of much longer duration amongst men than women it was not altogether surprising that there were nearly three times as many adult males as adult females on the sputum positive register. Below the age of 16 years, however, there are more females than males. These figures show plainly in which directions investigations must be made to secure prevention of the disease, and prevention should be our aim, for the treatment of 'open' tuberculosis of the lung as at present carried out is, for the most part, only palliative.

The need for the drastic reform of Domiciliary Treatment is emphasised by the unsatisfactory state of affairs, as regards the home conditions of the sputum positive cases, disclosed in the reports of the visiting nurses at the end of the year.

During the year an attempt was made to discover whether there was any causal relationship between pneumonia and pulmonary tuberculosis.

So far as one could gather the connection was only slight, though certainly more cases of phthisis resulted after 'influenzal' than ordinary lobar pneumonia, but further research on this question is proceeding.

As 'Sanatorium Benefit' ceased to be a special benefit for insured persons after April 30th, 1921, when the local authorities assumed responsibility for the treatment of all tuberculous cases in their areas, the returns have been prepared up till its cessation and some facts and figures relating to it are given in an 'Addendum.'

My warmest thanks are due to the nursing and clerical staffs whose assistance has been invaluable.

It is a matter for great regret that three (out of five) of the visiting nurses have left the department to take up better paid positions elsewhere.

In dealing with a chronic disease like tuberculosis, continuity of service is of the utmost importance, and if this is broken, inefficiency results, for it takes a new nurse fully six months to become intimately acquainted with her district and patients.

The preceding remarks apply equally to the case of the Assistant Tuberculosis Officer, and since Dr. Henderson's departure, Drs. Wotherspoon and McKenzie have come and gone, all to much better posts from a financial stand-point.

In concluding, Sir, I wish to express my personal appreciation of the help and support which you have always rendered so readily and so freely.

Yours faithfully,

W. H. DICKINSON,

Tuberculosis Medical Officer.

REPORT.

Notifications.—917 notifications were received during the year but some were duplicates, so that the total number of new cases was 837, of whom 593 were certified to be suffering from 'pulmonary' and 244 from 'other forms' of tuberculosis.

The details as regards sex and age are given in the accompanying table.

SUMMARY OF NOTIFICATIONS DURING THE PERIOD, 1ST JANUARY TO 31ST DECEMBER, 1920.

AGE PERIODS.	Number of Notifications on Form "A."											Number of Notifications on Form "B."			Number of Notifications on Form "C."		Number of Notifications on Form "D."		
	Primary Notifications.																		Total Notifications (including Cases previously notified by other doctors).
	Primary Notifications.																		
	0 to 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 35.	35 to 45.	45 to 55.	55 to 65.	65 and upwards.									TOTAL.
Pulmonary— Males ...	2	8	5	18	36	63	77	63	70	17	11	370	25	115	11	111			
	...	7	12	17	25	28	55	44	20	11	4	223	26	39	4	34			
Non-Pulmonary— Males ...	7	35	19	18	15	9	6	6	5	2	...	124	6	6	1	8			
	7	28	28	13	14	7	8	5	4	6	...	120	13	9	1	9			
TOTAL ...	16	78	64	66	90	107	146	118	99	36	17	837	70	169	17	162			
	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
	During the year, the School Medical Officer referred all suspicious cases to the Tuberculosis Medical Officer.																		

Form "A."—Notification by any Medical Practitioner of a case of Tuberculosis (whether at an Institution or otherwise).
Form "B."—Notification by School Medical Officers of cases of Tuberculosis in children attending Public Elementary Schools of which he has become aware in the course of inspection.
Form "C."—Notification by the Medical Officers of Poor Law Institutions and Sanatoria of persons admitted who are suffering from Tuberculosis.
Form "D."—Notification by the Medical Officers of Poor Law Institutions and Sanatoria of persons discharged who are suffering from Tuberculosis.

Deaths.—506 deaths were registered as due to some form of tuberculosis, and of these 356 were certified as due to pulmonary tuberculosis (including cases of acute phthisis) and 150 to other forms of the disease.

On these figures the death rates per 1,000 population were :—

	Number of Deaths.	Death Rate per 1,000 Population.
Pulmonary Tuberculosis	356	1·24
Other Forms of Tuberculosis	150	0·52
Total Tuberculosis Death Rate (uncorrected)	506	1·76

It must be noted, however, that 33 residents of Newcastle died in other parts of the United Kingdom from tuberculosis (31 pulmonary; 2 other forms), while 50 of the deaths (19 pulmonary; 31 other forms) registered in Newcastle were those of temporary residents.

The corrected deaths and death rates per 1,000 of the population were :—

	Number of Deaths.	Death Rate per 1,000 Population.
Pulmonary Tuberculosis	368	1·29
Other Forms	121	0·42
All forms of Tuberculosis (corrected)	489	1·71

The details as regards sex and age together with the form of the disease are given for 463 persons who were residents of Newcastle and died in the city, in the accompanying table.

DEATHS FROM TUBERCULOSIS.—Sex and Age Distribution.

	Under 1 year.		1 and 2		3 and 4		5 to 10		10 to 15		15		16 to 20		20 to 25		25 to 35		35 to 45		45 to 55		55 to 65		65 to 70		70 and upwards		Total..	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Pulmonary Tuberculosis ...	1	...	1	3	...	1	1	6	11	1	5	16	14	22	16	41	26	49	34	36	15	11	10	7	1	2	1	...	194	143
Acute Phthisis ...	...	...	...	...	...	...	...	1	...	...	...	...	...	2	...	1	1	...	...	...	...	...	...	...	...	...	...	...	3	2
Acute Miliary Tuberculosis	...	...	...	...	...	3	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	3
Tuberculous Meningitis ...	1	3	9	7	5	3	6	3	3	...	...	1	2	1	1	1	2	...	...	...	...	...	...	...	...	...	...	...	24	27
Abdominal Tuberculosis ...	3	...	3	4	2	4	1	...	2	...	...	3	1	...	1	...	3	...	1	1	...	...	...	...	...	...	...	...	15	16
Spinal Column ...	...	...	...	...	...	...	1	...	...	...	...	...	1	1	...	...	...	...	...	1	1	...	...	...	...	...	...	...	4	2
Tuberculosis of Joints	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	3
Tuberculosis of Skin	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
Tuberculosis of Larynx	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Disseminated Tuberculosis	1	...	1	2	1	...	1	1	2	1	1	...	1	1	1	...	1	1	2	1	1	...	...	...	...	...	...	9	11	
Tuberculosis of other Organs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL ...	6	3	14	17	8	8	10	14	13	20	1	6	21	21	27	19	43	33	50	38	39	17	12	11	7	1	3	1	254	209

N.B.—The above only includes those persons who were residents of, and died in, Newcastle-upon-Tyne.

76·9 per cent. of the 'lung' cases were known to the dispensary staff, 200 having visited the dispensary and an additional 63 having been attended in their homes by the visiting nurses.

Only 24 per cent. of the 'other forms' were attended at or from the dispensary, but this is due to the fact that 50 per cent. of the non-pulmonary cases were not notified before death (see later).

Of 342 deaths from pulmonary tuberculosis the diagnosis was verified bacteriologically in 225 instances, *i.e.*, 65·8 per cent.

If the 52 unnotified cases be excluded, the percentage is 77·6—a fairly satisfactory figure.

Duration of Illness.—Wherever possible, in pulmonary cases, enquiry was made as to the length of time the deceased had been ill, and the average duration of illness was found to be 32·3 months. Important differences were discovered when age and sex were considered, the figures being 38 months for adult males, 26·8 months for adult females, and 16·9 months for those below 16 years of age (both sexes).

The period between notification and death was, as one would expect, longer in the adult males than in the adult females and children, but averaged 13·8 months for all cases.

As the duration of illness for all cases was 32·3 months, each patient who died during the year must, on the average, have been ill for over 18 months before notification.

43 per cent. of the patients had either not been notified prior to death (15 per cent.), or died within 3 months of notification (28 per cent.) and in consequence little or nothing could be done for them.

Further details and comparative figures for previous years are submitted on next page :—

RETURN OF DEATHS FROM TUBERCULOSIS OF THE
LUNGS OCCURRING IN:—

	Deaths which occurred in these years.										
	1913	1914	1915	1916	1917	1918	1919	1920			
								M.	F.	Children.	TOTAL.
Persons not notified	39	57	38	27	55	67	43	27	17	8	52
,, notified under 1 month	36	28	46	42	26	42	62	27	13	6	46
,, between 1 and 3 months	71	92	98	113	97	73	33	24	17	8	49
,, ,, 3 ,, 6 ,,	49	54	47	61	56	27	29	25	12	3	41
Total under 6 months ...	195	231	229	243	234	209	167	103	60	25	188
Persons notified between											
6 and 12 months...	57	49	37	43	47	50	38	24	21	6	51
,, 12 ,, 18 ,, ...	29	25	32	25	30	19	19	10	13	3	26
,, 18 ,, 24 ,, ...	14	12	21	14	17	20	12	7	8	...	15
,, 2 ,, 3 years ...	2	32	24	24	17	15	19	11	8	1	20
,, over 3 years ...	...	2	24	39	38	51	47	32	8	2	42
TOTAL	297	351	367	388	383	364	302	187	118	37	342

N.B.—The above deaths are those persons who were residents of, and died in, Newcastle-upon-Tyne.

The figures for non-pulmonary forms of tuberculosis were even worse, for in 59 instances out of the 121 deaths, *i.e.*, roughly 50 per cent., the disease had not been notified prior to death.

While this is partly due to the fact that there is a great shortage of institutional accommodation for the treatment of non-pulmonary forms of the disease, the figures show that there is still great laxity in respect of the notification of all forms of tuberculosis.

Occupation.—The nature of the work done and the conditions under which it is carried on have an important bearing on the incidence of disease, and probably account for the large excess (over 50 per cent.) of adult male over adult female deaths from pulmonary tuberculosis.

182 'insured persons' (154 males and 28 females) are included in the 342 deaths.

42 of the males were ex-Service men, but it is interesting to note that so far no ex-member of the Women's Auxiliary Forces has died of phthisis—indeed, no case amongst such

women has come to the notice of the dispensary staff up to date.

Family History.—In 105 instances amongst the 326 cases investigated after death, *i.e.*, in 32·3 per cent., there was a history that some near relation was suffering from, or had died of, pulmonary tuberculosis. Here again the influence of sex and age was shown, for the figures were 23·5 for men, 42·7 for women, and 45·4 for children.

House Accommodation.—The home conditions of the working classes are intimately associated with occupation and family history as predisposing to tuberculosis.

The numbers of rooms in the dwellings occupied by 326 persons who died of phthisis were as follows:—

Rooms in Dwelling.	1	2	3	4	More than 4	Common Lodging Houses.	Total.
Deaths ...	28	95	80	69	51	3	326

As regards the type of house occupied 192 were flats, 70 tenements, 61 self-contained, and 3 common lodging houses.

Ward Distribution of Tuberculosis.—Considerable interest attaches to the prevalence of tuberculosis in the various wards of the city, and a table has been prepared showing, for each ward, the estimated populations, the number of notifications and deaths, together with the rates per thousand. Further, it has been thought convenient to incorporate in this return the number of insured persons who have applied for “Sanatorium Benefit,” and the number enrolled on the Dispensary Register during the year.

It is apparent at once, from the table, that the death rate per thousand population (which in the case of tuberculosis is of far more practical value than the notified incidence per thousand) is much higher in the poorer and congested wards than in those enjoying more favourable conditions, and also that the largest number of infective foci are found in those quarters in which it is most difficult to prevent the spread of infection.

WARD DISTRIBUTION OF TUBERCULOSIS. 1920.

WARD.	Population estimated on Registrar General's figures for 1920.	NOTIFICATIONS.						DEATHS.						Application for Sanatorium Benefit.	Persons on Dispensary Register.
		Pulmonary.	Attack rate per 1,000 of population.	Non-Pulmonary.	Attack rate per 1,000 of population.	TOTAL.	Attack rate per 1,000 of population.	Pulmonary.	Death rate per 1,000 of population.	Non-Pulmonary.	Death rate per 1,000 of population.	TOTAL.	Death rate per 1,000 of population.		
St. Nicholas'	3,759	10	2.66	5	1.33	15	3.99	10	2.66	5	1.33	15	3.99	2	15
St. Thomas'	14,862	23	1.55	10	0.67	33	2.22	8	0.54	8	0.54	16	1.08	10	37
St. John's ...	16,175	47	2.90	10	0.62	57	3.52	28	1.73	5	0.31	33	2.04	22	85
Stephenson	19,755	47	2.38	21	1.06	68	3.44	25	1.26	12	0.61	37	1.87	22	71
Armstrong	16,462	28	1.70	34	2.06	62	3.76	20	1.21	15	0.91	35	2.12	11	59
Elswick ...	13,324	23	1.72	7	0.53	30	2.25	15	1.12	5	0.38	20	1.50	5	37
Westgate ...	16,082	30	1.86	11	0.68	41	2.54	14	0.87	7	0.43	21	1.30	15	68
Arthur's Hill	12,039	10	0.83	6	0.50	16	1.33	8	0.66	4	0.33	12	0.99	3	8
Benwell ...	18,526	52	2.81	27	1.45	79	4.26	22	1.19	7	0.37	29	1.56	22	86
Fenham ...	11,624	16	1.37	5	0.43	21	1.80	16	1.37	1	0.09	17	1.46	6	22
All Saints ...	18,649	64	3.43	24	1.29	88	4.72	33	1.77	9	0.48	42	2.25	30	129
St. Andrew's	13,146	38	2.89	14	1.06	52	3.95	20	1.52	11	0.83	31	2.35	13	59
Jesmond ...	11,640	15	1.28	3	0.26	18	1.54	7	0.60	1	0.08	8	0.68	4	10
Dene ...	12,833	19	1.48	5	0.39	24	1.87	11	0.86	4	0.31	15	1.17	4	15
Heaton ...	16,335	32	1.96	8	0.49	40	2.45	14	0.86	4	0.24	18	1.10	13	57
Byker ...	18,418	38	2.06	11	0.60	49	2.66	21	1.13	6	0.33	27	1.46	20	87
St. Lawrence	18,868	38	2.01	21	1.11	59	3.12	31	1.64	11	0.58	42	2.22	15	94
St. Anthony's	16,627	33	1.98	12	0.72	45	2.70	19	1.14	3	0.18	22	1.32	17	66
Walker ...	16,937	30	1.77	10	0.59	40	2.36	20	1.18	3	0.17	23	1.35	13	69
City ...	286,061	593	2.07	244	0.85	837	2.92	342	1.20	121	0.42	463	1.62	247	1074

NOTE.—Deaths occurring in Public Institutions. have been allocated in every case to the Wards in which they resided.
The figures relating to deaths only include those persons who were residents of, and died in, Newcastle-upon-Tyne.

THE TUBERCULOSIS DISPENSARY.

The number of new patients entered on the register was 1,074, and was greater than in any previous year.

437 of them were sent direct by general practitioners, 230 were referred to the dispensary by the visiting nurses, 134 were sent by the Local War Pensions Committee or Medical Boards, 128 by the School Medical Officers and the remainder came from various sources, *e.g.*, Royal Infirmary (48), Insurance Committee (23), Citizen's Service Society, etc.

274 had been notified previously, and the balance (800) were contacts or suspects and 213 of these were notified by the Tuberculosis Medical Officer.

509 were 'insured' persons, and 493 were dependents of 'insured persons,' leaving only 72 of the uninsured classes.

The total number of attendances by patients at the Dispensary showed an increase on the previous year, viz.: 12,170 as against 10,332 in 1919. 2,482 patients were seen, so that each one visited the Dispensary on the average 5 times during the year.

The total number of complete physical examinations made was 2,711, including 1,451 males, out of 4,667 attendances; 459 females, out of 1,972 attendances; and 801 children out of 5,531 attendances; giving an average of 1 every 3 visits for males, every 4 for females, and every 7 for children.

24·7 per cent. of the cases had been verified bacteriologically—42 per cent. of the males, 33·3 per cent. of the females, and only 3 per cent. of those under 16 years of age. The details are tabulated below:—

Sputum Examination.	Number of Patients who attended the Dispensary during the Year 1920.				Ex-Service Men (included in the Total).
	Total.	Males.	Females.	Under 16 years of age	
Bacilli found	613	432	151	30	201
Bacilli <i>not</i> found	1,869	598	302	969	367
Total	2,482	1,030	453	999	568

The number of living sputum-positive cases on the Dispensary register at the end of the year was 567, consisting of 406 males (including 174 ex-Service men) 139 females and 22 children.

The marked preponderance of males over females, viz.: in the ratio of nearly 3 to 1 is worthy of note.

520 of these cases had attended the Dispensary during the year 1920, and 47 failed to do so, some because they were unable to come, while others refused on the grounds that they did not need any advice or assistance.

Many of these cases have been attending for several years, and the year of booking is given in the subjoined tables, together with the ages of the patients :—

AGES OF PERSONS ALIVE ON DECEMBER 31ST, 1920, IN WHOSE SPUTUM TUBERCLE BACILLI HAD BEEN FOUND; TOGETHER WITH THE YEAR IN WHICH THEY WERE ENTERED ON THE DISPENSARY REGISTER.

Children.

Year.	1 to 5.		5 to 10.		10 to 15.		15 Years.		Total.	
	M.	F.	M	F.	M.	F.	M.	F.	M.	F.
1913	...	...	...	...	...	...	...	...	...	...
1914	...	...	...	...	...	...	...	...	...	...
1915	...	...	...	...	...	...	...	...	...	...
1916	...	...	...	...	...	...	...	...	...	...
1917	...	...	...	1	...	2	...	...	...	3
1918	...	...	...	1	2	1	...	...	2	2
1919	...	...	...	...	...	2	...	1	...	3
1920	...	...	...	3	4	3	...	2	4	8
Total	...	...	...	5	6	8	...	3	6	16

AGES OF PERSONS ALIVE ON DECEMBER 31ST, 1920, IN WHOSE SPUTUM TUBERCLE BACILLI HAD BEEN FOUND ; TOGETHER WITH THE YEAR IN WHICH THEY WERE ENTERED ON THE DISPENSARY REGISTER.

Males.

Year.	16 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and upward.	Total.
1913	1	...	10	6	4	...	...	21
1914	1	...	11	7	6	1	...	26
1915	...	2	3	3	5	3	...	16
1916	...	4	5	1	4	4	1	19
1917	3	8	10	6	5	...	...	32
1918	2	5	5	7	9	2	2	32
1919	4	...	3	9	7	3	...	26
1920	13	5	3	13	22	2	2	60
Total ...	24	24	50	52	62	15	5	232

Discharged Soldiers.

1913	...	...	2	1	...	...	...	3
1914	...	1	1	1	...	...	...	3
1915	...	...	3	1	...	...	...	4
1916	...	3	6	5	...	...	...	14
1917	...	...	7	6	...	...	...	13
1918	...	7	13	6	2	...	...	28
1919	...	11	17	6	4	...	...	38
1920	1	21	26	15	7	1	...	71
Total ...	1	43	75	41	13	1	...	174

Females.

1913	1	...	4	...	2	...	...	7
1914	2	2	9	6	1	...	...	20
1915	1	1	2	4	...	1	...	9
1916	2	4	3	3	...	1	...	13
1917	3	1	3	3	...	1	...	11
1918	3	3	3	4	2	...	...	15
1919	2	5	10	1	1	1	...	20
1920	4	11	16	8	3	2	...	44
Total ...	18	27	50	29	9	6	...	139

The Work of the Nurses.—During the year the visiting staff was augmented and an effort was made to visit every case notified as suffering from tuberculosis, whether pulmonary or ‘other forms.’

712 new patients were seen as against 593 in 1919, and 13,211 subsequent visits were made, giving a grand total of 13,923 for the year.

2,811 of these visits were paid to ex-Service men.

The number of patients on the Nurses’ lists on December 31st, 1920, was 2,969, comprising 1,178 males (including 540 ex-Service men), 643 females, and 1,148 children.

In 582 cases tubercle bacilli had been found in the sputum, and special attention has always been paid to these infective cases.

They are visited at least once monthly, and their contacts are kept under the closest possible supervision.

A comprehensive survey of these cases was made early in 1921, and some very interesting and valuable facts were brought to light.

Below the age of 16 years there were only 20 cases, 13 females and 7 males, while above that age there are nearly three times as many male cases as females, and over 45 years five times the number.

270 or nearly 50 per cent. of the ‘adult’ cases were between the ages of 20 and 35 years. Over 60 per cent. were natives of Newcastle, the County of Durham providing the next largest quota, and then the County of Northumberland.

As regards conjugal status, 282 were married, 261 were single, 33 were widowers or widows, while in 6 cases there was no record available.

419 were insured persons, and 365 had applied for ‘Sanatorium Benefit.’

404 (307 males and 97 females), roughly 70 per cent. of the total, had received institutional treatment at some time or

another, and 292 (nearly 50 per cent.) had been in Barrasford Sanatorium.

With regard to their economic status this could not be ascertained in respect of 27 patients and 78 were in institutions, but of the 477 remaining 276 were working or fit for work (some only part time), 160 were unable to follow any occupation but were not bed-fast, while 41 were confined to bed. The last category were mostly hospital cases for whom there was not sufficient accommodation available.

The housing conditions were not known in 42 instances, and 12 patients were living in common lodging houses. Of the others, 317 were classed as good, 55 as frankly bad, and 156 left much to be desired.

It is proverbial that overcrowding is rampant in the city, and when the sleeping arrangements were analysed a very serious state of affairs was disclosed.

In spite of domiciliary visits and constant preaching of the urgent need for the most careful isolation of infectious patients it was found that although 78 patients, including many of the worst cases, were in institutions, there were still 209 infective cases who had neither a separate room nor a separate bed!

In 122 instances it is recorded that as a result of the ministrations of the Dispensary Staff the sleeping arrangements had been changed for the better, so that the original conditions must have been appalling.

In addition to the routine work of the Dispensary an attempt was made to discover whether there was any obvious causal relationship between pneumonia—especially influenzal pneumonia—and pulmonary tuberculosis.

Through the courtesy of the chief health visitor, Miss Cameron, the particulars relating to all the cases of pneumonia, notified during the year 1919, were placed at the disposal of

the Tuberculosis Medical Officer, and, as far as possible, all the patients known to be still alive, when last seen by Miss Cameron's staff, were visited.

297 of the notifications were of lobar pneumonia, 269 of pneumonia associated with influenza, and 38 of pneumonia following other diseases, mostly measles in early childhood.

Many of the patients were found to have died of the original disease, and some could not be traced, but 204 lobar pneumonias were investigated, 163 post influenza pneumonias and 27 'other' cases.

It was found that a great aftermath of ill-health had followed on these diseases, most noticeable in the case of influenzal pneumonia, but the number of patients developing pulmonary tuberculosis was very small, namely six, five of these being after influenza.

It is difficult to reconcile these figures with the other records, for on enquiry it was found that 42 or 15·3 per cent. of the 274 new sputum positive cases booked between June 1st, 1918, and June 30th, 1920, gave an attack of influenza as the starting point of their illness.

It would appear, therefore, that either influenzal pneumonia had no pronounced effect in predisposing to pulmonary tuberculosis or else a very large number of the cases escaped notification.

Many cases of tubercle of the lung begin very acutely with symptoms resembling influenza, and this probably accounts for the large number of patients who ascribed their disease as originating after an attack of influenza.

In this connection it should be here noted that recent observations by the writer lead him to suppose that the original acute attack often results in extensive lesions in both lungs and as a consequence very many cases of pulmonary tuberculosis are already in the third stage of Turban's classification by the time that they are recognisable.

The Work of the Sanitary Inspector.—This officer disinfects houses after deaths or changes of address of consumptives, arranges for the removal and disinfection of phthisical patients' clothing and bedding, and reports on any insanitary conditions existing in the homes of dispensary patients, such as overcrowding, insufficient ventilation, or defective sanitary arrangements.

The details of his work were as follows:—

Houses visited	...	...	...	...	...	526
Houses disinfected (total)	...	...	...	...	...	519
For patients going to Sanatoria	...	...	...	...	...	116
„ „ changing their address	...	...	...	...	...	17
„ „ changing their rooms	...	...	...	...	...	1
„ „ going to Hospital	...	...	...	...	...	132
After death	...	...	...	...	...	253
Rooms disinfected in above houses	...	...	...	...	...	625
Total number of visits	...	...	...	...	...	1,077
Houses found to have sanitary defects (including overcrowding) and referred to the Inspector of Nuisances	...	...	...	...	...	123

Bacteriological Examination of Sputum.—Every effort is made to verify each notified case by bacteriological means, and during the year 1,827 specimens of sputum were examined at the Dispensary.

Of this number 434 were found to contain tubercle bacilli while 1,393 gave negative results.

In addition 652 samples of sputum were sent, for examination, to the College of Medicine by the medical practitioners of the city.

Of these 171 proved positive, and 481 negative.

INSTITUTIONAL TREATMENT.

45 beds were provided at Barrasford Sanatorium for early or moderately advanced cases of pulmonary tuberculosis, 62 beds were available for more advanced or emergency cases at the Sanatorium Pavilions at the City Hospital, Walker Gate, while at Stannington Sanatorium 30 beds were maintained for the treatment of tuberculous children.

Barrasford Sanatorium.—The beds were continuously occupied and 131 persons completed treatment during the year.

The details as to “insured” and “uninsured” persons, males and females, together with the average length of stay in the institution, are submitted herewith:—

PATIENTS WHO RECEIVED TREATMENT IN BARRASFORD SANATORIUM DURING YEAR 1920.

	In Barrasford Sanatorium on 1st January, 1920.	Admitted during year.	Persons who completed treatment during year.			In Barrasford on 31st Dec., 1920.
			Number.	Total Number of days.	Average Length of Stay in days.	
Uninsured Males ...	3	10	7	928	132	6
Uninsured Females...	7	15	13	2,135	164	9
Insured Males ...	29	*92	98	12,217	124	23
Insured Females ...	4	13	13	1,847	142	4
Total ...	43	130	131	17,127	129	42

*Including 2 patients who were re-admitted.

The results of treatment were satisfactory, and the condition of the patients on discharge was as follows:—

RESULTS.					Males.	Females.	Total.
(a) Fit to work	...	...	...	...	75	12	87
(b) Improved ...	...	...	...	...	17	8	25
(c) Without improvement	...	...	...	...	*10	6	16
(d) Worse	...	...	...	...	3	...	3
Total	...	...	...	...	105	26	131

*Including 5 patients who were in the Sanatorium less than 12 days.

Each discharged patient is visited at frequent intervals by one of the Dispensary Staff and is encouraged to report periodically so that he can be examined and records kept of his condition.

In the next table a summary is given of the condition on December 31st, 1920, of all the patients treated at the Corporation expense since 1908. It will be noticed that most of the earlier cases are returned as dead or untraceable:—

PATIENTS WHO RECEIVED TREATMENT IN BARRASFORD SANATORIUM,
AND THE RESULTS.

YEAR.	Number of Patients discharged from Barrasford Sanatorium.	MALES.	FEMALES.	Condition at end of Year 1920.					Total Number of days in the Sanatorium.	Average number of days in the Sanatorium.
				Well, or working or fit to work.	Improved or moderately well	Relapsed.	Dead.	Lost sight of, or left the district		
1909	55	34	21	2	6	...	35	12	6,260	114
1910	64	41	23	7	3	...	39	15	6,471	101
1911	71	45	26	10	6	...	46	9	6,868	97
1912	67	47	20	7	6	...	38	16	5,396	81
1913	85	58	27	18	5	...	43	19	9,567	112
1914	78	59	19	25	5	...	37	11	9,723	124
1915	74	54	20	19	6	2	30	17	10,803	146
1916	64	45	19	20	3	2	30	9	10,005	156
1917	68	45	23	23	7	2	27	9	10,603	156
1918	89	81	8	44	8	7	22	8	11,926	134
1919	107	85	22	46	20	11	25	5	14,207	133
1920	131	105	26	79	35	5	11	1	17,127	129
TOTAL...	953	699	254	300	110	29	383	131	118,956	124
Received treatment in previous years ...	38	25	13	11	8	...	16	3	...	...
Nett Cases	915	674	241	289	102	29	367	128	118,956	124

While the appearance of tubercle bacilli in the sputum indicates that there is active destruction of lung tissue, still it must be recognised that there is always a doubt about any case in which the diagnosis has not been verified bacteriologically.

Accordingly the bacterial history of each patient admitted to Barrasford Sanatorium has been investigated as thoroughly as possible, and the results are tabulated below :—

BACTERIAL HISTORY OF
PATIENTS WHO RECEIVED TREATMENT IN BARRASFORD SANATORIUM.

YEAR.	Persons discharged from Barrasford Sanatorium.			Number who had Tubercle Bacilli found in the Sputum after discharge.	Persons deceased at the end of the year.				Cases who had Tubercle Bacilli in the Sputum and could not be traced at end of Year.
	TOTAL Nett Cases.	Number who had Tubercle Bacilli found in the Sputum.	Number who had <i>not</i> Tubercle Bacilli found in the Sputum.		TOTAL.	Tubercle Bacilli found in the Sputum before or during treatment.	Tubercle Bacilli <i>not</i> found in the Sputum before or during treatment.	Tubercle Bacilli found in the Sputum after discharge.	
1909	55	35	20	2	35	29	5	1	2
1910	64	46	18	3	39	32	4	3	9
1911	66	44	22	6	42	34	4	4	5
1912	63	36	27	9	35	26	4	5	8
1913	81	54	27	3	42	33	6	3	10
1914	74	52	22	1	35	34	1	...	3
1915	73	51	22	3	29	26	1	2	7
1916	63	49	14	3	30	27	1	2	6
1917	64	41	23	5	24	20	2	2	6
1918	83	54	29	4	20	19	1	...	6
1919	102	82	20	4	25	25	...	...	5
1920	127	89	38	1	11	10	1	...	1
TOTAL.	915	633	282	44	367	315	30	22	68

From the above it is obvious that the finding of tubercle bacilli before or during treatment renders the prognosis much more grave.

STANNINGTON SANATORIUM.

The 30 beds were kept fully occupied throughout the year and 50 patients completed treatment.

The details appear below :—

CHILDREN WHO RECEIVED TREATMENT IN STANNINGTON SANATORIUM DURING YEAR 1920.

	In Sana- torium on 1st Jan., 1920.	Admitted during the year.	Persons who completed treatment during the year.			In Sana- torium on 31st Dec., 1920.
			Number.	Total number of days.	Average length of stay in days.	
Males	13	*19	19	5,354	282	13
Females	18	27	31	6,892	222	14
Total	31	46	50	12,246	245	27

*Including 1 patient who was re-admitted.

In nearly every case great benefit accrued to the patient as is shown in the following return:—

	Males.	Females.	Total.
(a) Much Improved	13	18	31
(b) Improved	5	6	11
(c) Without Improvement	1	6	7
(d) Worse	...	1	1
Total	19	31	50

SANATORIUM PAVILIONS, WALKER GATE.

There has been great demand for the beds provided here, and of the 167 patients admitted 89 were men discharged from the services suffering from tuberculosis.

Of the above number, 27 were pensioners residing in other districts, and the expenses of their maintenance were defrayed

by the authorities responsible for their admission. Further details regarding the patients treated during the year are given in the accompanying table:—

PATIENTS WHO RECEIVED TREATMENT IN SANATORIUM PAVILIONS
AT THE CITY HOSPITAL, WALKER GATE, DURING YEAR 1920.

	Patients in Hos- pital on 1st Jan., 1920.	Patients admitted.	Patients who have completed treatment.			In Hospital 31st Dec., 1920.
			Number.	Total number of days.	Average length of stay in days.	
Uninsured, Male ...	8	7	10	3820	382	5
„ Female	15	31	31	3520	113	15
Insured, Male ...	36	119	121	15200	125	34
„ Female ...	7	10	13	1844	142	4
Total ...	66	167	175	24384	139	58

N.B.—2 patients were re-admitted and are counted as 4 admissions.

The results of treatment where completed are as follows:—

	Males.	Females.	Total.
(a) Fit to Work ...	2	1	3
(b) Improved ...	57	14	71
(c) Without Improvement ...	27	12	39
(d) Died in Hospital ...	45	17	62
Total ...	131	44	175

3 patients were transferred to Barrasford Sanatorium.

Of the 62 patients who died in the institution, 56 were Newcastle residents; and 6 were pensioners from other districts.

The various activities of the Tuberculosis Section have been summarised, and are set out on the following page together with the corresponding figures for previous years.

The steady and gradual increase in the volume of work accomplished is clearly indicated.

TUBERCULOSIS SECTION.

ANNUAL SUMMARY OF WORK DONE.

	1920	1919	1918	1917	1916	1915	1914	1913
<i>Notifications</i> ... Total	837	724	819	909	987	964	958	1246
Lungs	593	519	552	590	642	612	665	796
Other Forms	244	205	267	319	345	352	293	450
Notified by T. M. O. ...	213	145	221	244	162	146	180	140
<i>Deaths (Corrected)</i> Total	489	455	531	571	557	542	529	479
Lungs	368	339	393	411	417	380	375	326
Other Forms	121	116	138	160	140	162	154	153
<i>Attendances at Dispensary</i>	12170	10332	11517	9286	7758	6473	6712	3656
New Patients	1074	819	904	969	850	899	1046	729
<i>Barrasford Sanatorium.</i>								
Admitted	130	114	95	69	67	70	78	86
Discharged	131	107	89	68	64	74	78	86
<i>Stannington Sanatorium.</i>								
Admitted	46	45	48	55	74	65	78	17
Discharged	50	43	49	55	73	65	55	11
<i>Sanatorium Pavilions, Walker Gate.</i>								
Admitted	167	185	207	181	146	54	40	38
Discharged	113	125	151	138	89	38	27	16
Died	62	48	30	48	26	17	14	8
<i>Bacteriological Exams.</i>								
<i>College of Medicine—Total</i>	652	642	529	604	624	600	714	910
Sputum—Positive ...	171	134	129	159	172	147	202	207
Negative	481	508	400	445	452	453	512	703
<i>Dispensary</i> ... Total	1827	1266	1080	957	708	608	764	354
Sputum—Positive ...	434	306	233	204	146	140	182	85
Negative	1393	960	847	753	562	468	582	269
<i>Urine Examinations</i> ...	1107	832	812	806	681	272	...	...
<i>Evening Consultations.</i>								
Attendances	1759	1499	1455	1264	1180	1124	1000	546
New Patients	89	53	57	84	96	128	130	59
<i>Work of Nurses.</i>								
New Patients	712	393	463	336	505	1055	1306	799
Subsequent Visits ...	13211	10976	9668	6188	7515	5429	6444	1235
Total ,, ...	13923	11369	10131	6524	8020	6484	7750	2014
East District	5752	4360	2993	2530	4050	3323	3729	...
West District	5393	3244	4499	3777	3970	3161	3921	...
Central District ...	2778	3765	2639	217	...	...	...	...
<i>Special Inspector's Visits</i>	1077	962	933	1110	1070	1400	2385	1835
Houses Disinfected ...	519	461	504	554	537	512	549	514
Rooms Disinfected ...	625	526	557	701	619	779	1077	1089
Sanitary Defects—Houses	123	29	22	34	17	23	48	71

ADDENDUM.

SANATORIUM BENEFIT.

Sanatorium Benefit ceased to be a special benefit for insured persons after April 30th, 1921, so some notes as to the number of cases dealt with, the forms of treatment given, and results of same will be given here briefly.

The total number of applications received was 1,864, from 1,549 men and 315 women. Only 54 of the applicants were suffering from non-pulmonary forms of tuberculosis. Of the pulmonary cases, 1,810 in number, the diagnosis had been verified bacteriologically in 1,292 instances.

The nature of the treatment received by all cases is shown in the appended table :—

NATURE OF TREATMENT RECEIVED.

Year of application.	Domiciliary only.	Domiciliary and Sanatorium.	Domiciliary and Hospital.	Domiciliary and Dispensary.	Domiciliary, Dispensary, and Sanatorium.	Domiciliary, Sanatorium, and Hospital.	Domiciliary, Dispensary, and Hospital.	Domiciliary, Dispensary, Sanatorium and Hospital.	No Recommendation.	Still receiving treatment on 30th April, 1921, included in other columns.
1912	36	26	4	...	2	1	...	...	4	Nil.
1913	92	49	24	4	7	5	3	...	3	3
1914	108	51	32	10	11	7	4	4	1	9
1915	76	34	29	9	12	7	3	2	3	5
1916	65	27	65	20	12	4	12	4	8	11
1917	47	22	83	10	19	13	9	7	2	17
1918	53	47	47	15	22	13	15	6	3	52
1919	61	68	59	33	7	9	2	5	3	76
1920	88	85	56	5	3	9	...	...	1	146
1921	21	22	12	...	...	1	...	...	1	52
Totals	647	431	411	106	95	69	48	28	29	371

The bulk of the treatment granted was administered in the patients' homes, viz. : 79·1 per cent. Domiciliary and 4·8 per cent. Dispensary, while Institutional Treatment (Sanatorium and Hospital) only amounted to 16·1 per cent., though the proportion increased in later years.

Details as to the total amount of treatment received by the applicants of the various years appear below :—

TOTAL TREATMENT RECEIVED (IN DAYS).

Year of Application.	Number of Applications.	Nature of Treatment.				TOTAL.	Percentage to Total Days.				Visits to Dispensary.	Nurses' Visits.
		Dom.	Disp.	San.	Hosp.		Dom.	Disp.	San.	Hosp.		
1912	73	29816	182	2891	973	33862	88·0	0·6	8·5	2·9	283	397
1913	187	99765	2519	7497	3524	113287	88·1	2·2	6·6	3·1	1908	2185
1914	228	118227	8569	10846	6975	144617	81·7	6·0	7·5	4·8	2380	3511
1915	175	70733	5601	8026	4736	89096	79·3	6·3	9·1	5·3	1655	2055
1916	217	92202	7541	9034	8010	116787	78·9	6·5	7·8	6·8	2137	2580
1917	212	85930	5469	8394	8930	108723	79·0	5·0	7·8	8·2	1775	2025
1918	221	90082	5739	11687	8674	116182	77·4	4·8	10·0	7·8	2179	1988
1919	247	64710	5350	12621	10211	92892	69·7	5·8	13·6	10·9	1917	1686
1920	247	43808	1070	10090	7453	62421	70·2	1·7	16·2	11·9	1580	1157
1921	57	1696	...	1010	563	3269	51·9	...	30·9	17·2	170	78
Totals	1864	696969	42040	82096	60049	881154	79·1	4·8	9·3	6·8	15984	17662

Barrasford Sanatorium.—600 patients (504 males and 96 females) were treated at this institution, and the immediate results were satisfactory, for 404 were discharged fit for work, 140 improved, while only 49 left without improvement and 7 worse.

By April 30th, 1921, however, many had failed to maintain their satisfactory condition, and the figures show that 236 were working or fit for work, 75 were only moderately well and only able to get about but not work, 26 had relapsed and were seriously ill, and 198 were known to be dead, while 65 had left the district and could not be traced.

City Hospital, Walker Gate.—643 insured persons (544 males and 99 females) were admitted to the Tuberculosis Wards at this institution during the nine years.

Discontinuance of Treatment.—1,493 cases completed treatment and the reasons for discontinuing treatment were: —

Disease arrested ...	...	...	163.
Left the district ...	...	...	243.
No evidence of active Tuberculosis ...			103.
Refused to attend the Dispensary ...			68.
No longer insured ...	...	...	12.
Dead ...	...	...	904.

With special reference to the 163 patients in the first category, 132 were still fit to work at the cessation of Sanatorium Benefit, 18 had relapsed (of these 12 were dead) and 13 could not be traced.

In 45 instances the sputum was reported to have contained tubercle bacilli, and of these 'open' cases, 36 were fit to work on April 30th, 1921, 3 had relapsed, 1 had left the district, and 5 had died.

371 patients were still receiving treatment, more than half of them having made their application in 1920 or the first 4 months of 1921. 56 were receiving institutional treatment, 188 were working or fit for work, and 127 were unable to work.

Conclusions.—Domiciliary Treatment formed by far the greatest bulk of the 'benefit,' and, generally speaking, while receiving it, patients stood most in need of assistance and received least.

Industrial Colonies and Village Settlements for those patients who have completed Sanatorium Treatment represent the ideal lines on which to proceed, as Domiciliary Treatment under such conditions is only a modification of the Sanatorium Routine.

They are likely to be too costly, however, and some practical modification must be evolved, possibly on the lines of the 'Municipal Workshop' suggested by Dr. Stanley Tinker.

Every Local Authority has its Workhouse, and now that the future of the Poor Law administration is in the melting pot it seems a pity that the Health and Pensions Ministries do not conjointly devise some scheme to provide suitable work for those crippled by disease, first for ex-Service men, and then for the ordinary population, entirely free from the stigma of pauperism, for too many patients would rather starve than enter the present-day Workhouse.

In the meantime, however, the chief hope for the improvement of the post-Sanatorium conditions lies in the formation of an efficient and enthusiastic Tuberculosis Care Council.

W. H. DICKINSON, M.B., D.P.H.

*Tuberculosis Dispensary,
June, 1927.*

Tuberculosis Medical Officer.

DISINFECTION.

5,674 cases of notifiable infectious disease have been inquired into by the Infectious Disease Inspectors and Health Visitors, and, with the exception of measles, the houses or rooms connected therewith disinfected by spraying with formalin. In connection with cases of tuberculosis, 526 houses, including 622 rooms, were similarly disinfected. Disinfection was also carried out in 165 special cases.

In all cases amongst civilians, except measles, the bedding and other infected articles were removed to the Disinfecting Station at the City Hospital, Walker Gate, and after sterilisation by steam returned to the owners.

Inquiries were also made in connection with 36 smallpox and 31 cerebro-spinal fever contacts. These persons were kept under observation until the possible incubation period was over.

1,170 extra visits of supervision to the cases left at home were made by the Infectious Disease Inspectors.

INFECTED ARTICLES PURIFIED IN THE DISINFECTING APPARATUS AT THE CITY HOSPITAL FOR INFECTIOUS DISEASES, WALKER GATE, AND THE SMALLPOX HOSPITAL, TOWN MOOR.

ARTICLES FROM CITY.		ARTICLES—HOSPITAL PROPERTY.	
1920.	1919.	1920.	1919.
25,474	20,196	15,710.	10,014.

4,275 articles of clothing, etc., were also disinfected at the Smallpox Hospital.

The staff have thus dealt with 45,459 articles at the two disinfectors during the year.

12 half-straw mattresses were destroyed as incapable of disinfection, and replaced by the Health Department.

The sum of £10 9s. 6d. was paid for loss of work and business, and goods destroyed on account of exposure to infection.

Fluid disinfectant, in half-pint tins, and disinfectant soap, in pound bars, were given out free on the order of the special inspectors, for home use in connection with infectious disease. Every precaution was taken to ensure that the material so dispensed was properly and economically used.

DISINFECTANTS DISTRIBUTED—1920.

FROM	FOR INFECTIOUS DISEASES.		FOR PHTHISIS.
	FLUID ($\frac{1}{2}$ pint tins.)	SOAP (1 lb. bars.)	FLUID ($\frac{1}{2}$ pint tins.)
Health Department	558	131	...
Tuberculosis Dispensary ...	...	...	96
Corporation Yard, Benwell ...	101	82	...
TOTAL ...	659	213	96

BACTERIOLOGICAL INVESTIGATIONS, 1920.

The following is a summary of the bacteriological investigations carried out on behalf of the Health Department of the Newcastle Corporation by Professor H. J. Hutchens at the University of Durham College of Medicine, Newcastle.

REPORT.

6,002 specimens were submitted for examination. The nature of the investigations, and the results obtained were as follows :—

	DIPHTHERIA.			PHTHISIS.			ENTERIC FEVER.		
	Total.	Posi- tive.	Nega- tive.	Total.	Posi- tive.	Nega- tive.	Total.	Posi- tive.	Nega- tive.
No. of Ex- aminations	1,120	175	945	652	172	480	40	4	36

Milk Examinations :—

	Total	Found	Not Found
1. For the tubercle bacillus	174	11	163

2. Bacterial content of organisms other than tubercle bacillus (the colon bacillus being taken as the indicator.)

Colon bacilli not found in 1 cc. or less	...	0
Colon bacilli found in 1 cc. but not in less		0
Colon bacilli found in 0·1 cc. but not in less		21
Colon bacilli found in 0·01 cc. but not in less		59
Colon bacilli found in 0·001 cc. but not in less		65
Colon bacilli found in 0·0001 cc. but not in less		13
Colon bacilli found in 0·00001 c.c. but not in less		16

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Four samples of certified Grade "A" milk were examined and the following results obtained :—

No. of bacteria per 1 cc.			Colon bacillus test.
<i>a</i>	5,900	...	Present in 0·1 cc.
<i>b</i>	6,300	...	Not found in 0·1 cc.
<i>c</i>	21,000	...	Present in 0·1 cc.
<i>d</i>	15,500	...	Present in 1·0 cc. but not in 0·1 cc.

Water Examinations :—

Class I. (Colon bacilli not found in 100 cc. or less)	5
Class II. (Colon bacilli found in 100 cc. but not in less)	44
Class III. (Colon bacilli found in 10 cc. but not in less)	115
Class IV. (Colon bacilli found in 1 cc. but not in less)	20

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Venereal Diseases :—

	WASSERMANN REACTIONS.	MICROSCOPICAL EXAMINATIONS.
		Gonococci, Spirochætes, etc.
No. of Examinations ...	3,119	495

Other Examinations :—

a Cerebro-spinal fever.

6 suspected cases were examined, and the meningococcus was found in one case. In the other cases, cerebro-spinal fever was excluded, but a definite diagnosis was not possible.

18 contacts were examined; no meningococci were found in any.

b Examination of blood for malarial parasites.

4 cases were examined, 2 were found to be infected, and in 2 no parasites were found.

c Enteric-dysentery carriers.

11 cases were examined, but no specific bacilli were found.

d Some experiments with a proprietary substance known as Glaxo were carried out, and a report submitted at the time.

e Some pleural fluid from a case of suspected tuberculous disease was examined, but the bacillus was not found.

H. J. HUTCHENS,
Bacteriologist.

*University of Durham College of Medicine,
6th May, 1921.*

REPORTS OF THE
VETERINARY OFFICER AND INSPECTOR
OF PROVISIONS, AND OF THE
INSPECTOR UNDER THE FOOD AND DRUGS
ACTS (INSPECTOR OF NUISANCES).

IV.—FOOD.

BOVINE TUBERCULOSIS.
INSPECTION OF MEAT AND PROVISIONS.
INSPECTION OF FOOD AND DRUGS.

**BOVINE TUBERCULOSIS,
AND THE INSPECTION OF MEAT
AND PROVISIONS
AND FOOD AND DRUGS.**

TUBERCULOUS MILK, 1920.

9 supplies were reported to be tuberculous during the year. 4 of the farms concerned were in Northumberland, 3 in Cumberland, and two in Dumfriesshire.

In two cases, both in Northumberland, the tuberculin test was applied to the herds, with the result that in one instance 8, and in the other 4, cows reacted.

At one of the Cumberland farms, 3 cows were found diseased and excluded from the herd. Check samples, however, proved positive to the inoculation test, and a further examination revealed another cow in a suspicious condition. In one of the Dumfriesshire cases, the farmer ceased to send milk to the City before the report was received. It was stated, however, that none of the cows showed clinical signs of disease, and no further information could be obtained.

In all of the remaining 5 cases clinical examination of the herds revealed affected animals, and in 3 of these check samples proved negative. In the other 2 cases check samples were not obtained.

INSPECTION OF MEAT AND PROVISIONS.

Report of the Veterinary Officer, Inspector of Meat, etc.

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I have pleasure in submitting the following Report for the year ended December 31st, 1920.

DISEASES OF ANIMALS ACTS, 1894-1914.

During the year, 7 outbreaks of contagious disease (as defined by the Acts) have occurred amongst the animals within the City, as compared with 42 the previous year.

THE DAIRIES, COWSHEDS, AND MILK SHOPS ORDERS, 1885-1899.

Within the City, there are 26 cowkeepers who occupy 40 cowsheds on 28 premises, and possess a total of 565 milch-cows. During the year 166 visits have been made to the cowsheds and dairies for the purpose of inspecting the buildings, etc., as to defects, sanitation and general cleanliness. As in previous years, it has been necessary from time to time, to warn several occupiers as to the necessity for the exercise of more stringent precautions against the pollution of the milk with excremental or other foreign matter. Owing to the continued stress of work concerning meat and other inspection it has been impossible to find sufficient time to devote to the examination of dairy herds as to disease, including tuberculosis, likely to render the milk supply dangerous to consumers and particularly young children.

RABIES.

During the year 3 cases of suspected rabies as occurring in the dog were reported, as compared with 5 cases the previous year.

On examination the animals were found not affected with the disease. Of the 3 animals in question, the first—a cross-bred Airedale and bearded Collie—was found free from disease; the second and third—both cross-bred Retrievers—were found suffering from an attack of distemper.

ANIMALS SLAUGHTERED FOR FOOD.

During the year 1920, 101,344 animals were slaughtered within the City, as compared with 119,464 slaughtered the previous year. The following table illustrates the number of animals slaughtered within the City during the past five years:—

TABLE No. 1.

ANIMALS SLAUGHTERED ON LICENSED PREMISES WITHIN THE CITY.

YEAR 1920.				1919.	1918.	1917.	1916.	
Horses	...	...	456	674	714	487	500	
Cows	...	...	1,908	25,151	18,379	26,333	25,365	
Heifers	...	...	9,243					
Bulls	...	...	1,073					
Bullocks	...	...	7,753					
Calves	...	...	2,347	3,561	2,412	1,989	...	
Tups	...	...	1,044	75,483	100,488	112,417	113,087	
Ewes	...	...	12,217					
Other Sheep	...	...	26,439					
Lambs	...	...	21,324					
Boars	...	...	247	14,595	9,735	15,669	21,500	
Sows	...	...	707					
Other Pigs	...	...	16,586					
Total Animals ...				101,344	119,464	131,728	156,895	160,452

THE INSPECTION OF MEAT, PROVISIONS, FISH, FRUIT, ETC.

During the year 1920, a total of 1,229 animal carcasses, together with 50 tons, 19 cwts., 5 lbs. of meat were condemned within the City and destroyed as being unfit for human consumption, as compared with $2,149\frac{3}{4}$ animal carcasses and 3 tons, 17 cwts., 5 lbs. of meat condemned and destroyed the previous year.

Of the 1,229 carcasses, $187\frac{1}{4}$ (177 carcasses and 41 quarters) were condemned on account of tuberculosis, as compared with 274 (264 carcasses and 40 quarters) the year previous.

TABLE NO. 2.

NUMBER OF VISITS AND INSPECTIONS OF PREMISES DURING THE YEAR 1920.

	Central Markets.			Meat Shops.		Fish Shops.		Provision Shops.		Fruit Shops.		Quayside.				
Slaughter Houses.	Meat and Provisions.	Fruit and Vegetables.	Fish Shops.	Wholesale.	Retail.	Wholesale.	Retail.	Wholesale.	Retail.	Wholesale.	Retail.	Vessels.	Wharves.	Cold Stores.	Goods Stations.	Sausage Factories.
1,786	600	527	527	3,499	605	20	1	176	66	66	10	201	146	12	52	4

IMPORTED FOODSTUFFS.

During the year 1920, some 61 vessels carrying foodstuffs from Denmark, America and Holland arrived at the Quayside, as compared with one vessel during the year 1919. 347 visits were made to the wharves and vessels alongside, 672 packages containing meat, etc., being opened and examined. Regarding these visits, eight were in response to official notices received from the Customs House concerning foodstuffs detained for inspection and certification.

Imported meat arriving within the City by rail is subjected to inspection and supervision within the wholesale shops and cold storage depots.

TABLE NO. 3.

FOODSTUFFS CONDEMNED AS UNFIT FOR HUMAN CONSUMPTION, BUT PERMITTED TO BE USED FOR ANIMAL FEEDING, AND FOODSTUFFS UNMARKETABLE, BUT ALLOWED TO BE USED FOR MANUFACTURING PURPOSES.

8 tons 5 cwts. Potatoes. 8,064 lbs. Currants. 865 lbs. Chocolates.	Animal Feeding.
147 lbs. Margarine. 48 $\frac{3}{4}$ lbs. Butter. 16 cwts. and 361 tins Egg Pulp. 90 lbs. Sugar.	Manufacturing Purposes.

The following foodstuffs, after condemnation, were destroyed by Orders of Magistrates:—Two boxes of Chocolates, 13 stones, 12 lbs. of Chocolates, and 331 Hams.

TABLE NO. 4. CARCASSES, ETC., DESTROYED AS BEING UNFIT FOR HUMAN CONSUMPTION DURING THE YEAR, 1920.

	Carcasses.				Lungs.			Hearts	Kidneys	Livers.	Tails	Heads.				Plucks.			Ox Tongues.	Ox Tripe.	Sheep Livers.	Pigs' Rinds.	Pigs' Maws.
	Beef.	Veal.	Mutton	Pork.	Sets Ox.	Sets Sheep.	Sets Pig.	Ox.	Ox.	Ox.	Ox.	Ox.	Calf.	Sheep.	Pig.	Calf.	Sheep.	Pig.	Ox Tongues.	Ox Tripe.	Sheep Livers.	Pigs' Rinds.	Pigs' Maws.
Tuberculosis ...	162 +	5	...	10	82	...	...	13	2	37	1	20	...	1	...	...	...	...	1	...	...	...	...
Swine Erysipelas ...	41 qrs.	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Actinomycosis ...	...	...	...	...	4	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Prexia ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pneumonia ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pleurisy ...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peritonitis and Dropsy ...	8 qrs.	...	...	...	...	...	...	1	2	...	2	2	...	...	...	...	...	...	1	...	...	...	...
Stomatitis ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Cirrhosis (Hydatids) ...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Jaundice and Emaciation ...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Emaciation and Dropsy ...	3 + 4 qrs.	2	19	...	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Fatty Degeneration...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Abscesses ...	1	...	5 + 1 qr. + 7 lbs.	...	13	...	...	4	1	8	...	1	...	...	...	...	1	...	2	...	...	...	...
Congestion ...	...	...	...	...	4	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Imperfectly Bled ...	...	...	2	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Traumatism ...	2	...	...	...	8	...	...	5	...	5	1	...	...	...	...	...	...	...	1	...	...	...	...
Died in Transit ...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Decomposition ...	5 + 40 qrs. + 33 tons 4 cwts 37 lbs.	7 + 2 qrs. + 79 lbs.	967 + 6 trunks + 17 tons 14 cwts 1 lb.	6	5	...	...	3	...	10,860 lbs.	60,063 lbs.	12	...	34	...	75	10,035 lbs.	1	...	4,821 lbs.	26 lbs.	2 cwts.	4 cwts.

TABLE NO. 5.
POULTRY, GAME, FISH, FRUIT AND PROVISIONS, Etc., DESTROYED AS BEING UNFIT FOR HUMAN CONSUMPTION
DURING THE YEAR 1920.

Cause of Unfitness.	Poultry and Game.	Fish.	Fruit and Vegetables.	Provisions.	
Unsound or Unwholesome.	546 Geese 185 Ducks 186 Chickens 77 Turkeys 31,985 Rabbits 7 Hares	56 lbs. Cod Fish 56 " Fish (Mixed) 126 " "John Dory" 618 " Salmon 1,232 " Herring 549 " Haddocks 84 " Prawns 1,120 " Salt Herring SHELL. 1,988 lbs. Mussels	224 lbs. Walnuts 240 " Black Currants 816 " Gooseberries 1,968 " Tomatoes 1 ton 4 cwts. Cabbages 4 tons 19 cwts. Turnips 6 " 16 " Oranges 8 " 5 " Potatoes	174½ lbs. Pork Sausage 14 " Black Puddings 6 " Brawn 4,731 " Ham 1,701 " Bacon 787 " Cheese 147 " Margarine 48¾ " Butter 16 cwts. 5 lbs. and 361 tins Egg Pulp 14 Meat Pies 8,064 lbs. Currants 19,604 Eggs 16 lbs. Yeast 90 " Sugar 10 jars Marmalade 55 " Jam 1 " Mincemeat	TINNED. Salmon ... Tins 28 Cray Fish ... 437 Rabbit ... 7 Lobster ... 4 Meat & Vegetables ... 2 Tomatoes ... 722 Beans ... 10 Syrup ... 1 Apples ... 24 Pine Apple ... 485 Pears ... 39 Fruit (Mixed) ... 1,225 Milk ... 790 Mutton ... lbs. 2,158 Corned Beef ... 3,020 Ox Tongue ... 190 BOTTLED. Pickles ... Btls. 3
				Confectionery.	
				865 lbs. Chocolates	

SLAUGHTER HOUSES.

During the year under report there were 103 separate premises licensed for slaughtering purposes within the City. Before the close of the year, however, one of these premises was discontinued as such, being now used for other purposes.

The slaughter houses are made up of five groups together with other ten separate establishments scattered in various parts of the City. It may be truly said that the difficulties in the way of attempting to put into operation an efficient system and standard of meat inspection within any given area will be found to increase almost in mathematical precision with the rise in number of the separate premises and as the area is found greater over which they are scattered. Throughout the country, outside the large cities and towns, the counties, for the purpose of slaughtering, should be mapped off in areas in each of which slaughtering should be centralized. In each of the cities and large towns no slaughtering should be permitted except within central municipal abattoirs. Under the present system only a percentage of the carcasses are seen at the time of slaughter, whereas under the abattoir system the carcasses and organs of each animal may be systematically examined. Although one recognizes and much appreciates the assistance, goodwill and integrity of the butchers generally, it nevertheless remains a fact that to have to rely in a considerable number of instances upon notifications of suspected disease reported by slaughtermen, for the detection of disease as it really exists is not only highly misleading but dangerous. The willingness on the part of certain individuals to report is one thing, but the ability to detect dangerous diseases the lesions of which may be deep seated or non-apparent to the slaughterman, is quite another.

PROSECUTIONS.

A general dealer was fined £10 for having deposited for the purpose of sale 331 hams which were unsound, unwholesome and unfit for human consumption.

I have the honour to be, Sir,

Your obedient Servant,

THOMAS PARKER, F.R.C.V.S.,

*Veterinary Inspector, and
Inspector of Meat, Provisions, &c.*

*Town Hall,
Newcastle-upon-Tyne.
September 30th, 1921.*

FOOD AND DRUGS ADULTERATION, Etc.

Total Samples.—The number of **samples** (of all kinds) obtained by the *Inspector of Nuisances* for analysis during the year was 1,263, against 1,167 in 1919. For details see table on page 130 A.

Of this total, only 796 were submitted for analysis to the Public Analyst, the remainder being milk samples which, on being tested in the offices of the Health Department, appeared to be genuine.

Informal Samples.—323 samples (included in the foregoing total) were collected “informally,” chiefly through the agency of hired persons.

Milk Samples.—The number of milk samples taken was 972; 85 of these were certified to be below the minimal limits fixed by the “Sale of Milk Regulations, 1901.”

Samples Not Genuine, etc.—The percentage of samples not genuine to the total number taken is 7·60 (compared with 10·45 for the previous year), and the percentage of non-genuine milk samples to the total number of milk samples obtained is 8·74 (as against 11·5 in 1919).

The total number of samples taken is at the rate of 4·4 per 1,000 of the population (estimated) of the City for the year 1920.

Milk Adulteration.—Of the 85 milk samples not genuine, 31 were deficient in non-fatty solids, 41 in milk-fat, and 13 in both.

The percentage of deficiency in fat varied from 1·6 to 40·0 (the average being 13·2), and in solids not fat from 1·2 to 28·6 (average 7·94).

Margarine Act, 1887.—52 samples of margarine (included in the foregoing total of 1,263) have been purchased and analysed. These were found to be genuine, except that all contained boric acid (as below).

Margarine Warehouses.—34 visits have been made to the margarine warehouses. No contravention of the law as to the marking of packages was found.

Samples taken for Analysis during the Year 1920.

ARTICLE.	No. of Samples obtained.			Result of Analysis.		Action Taken.				REMARKS.
	Formal.	Informal.	Total.	Genuine.	Not Genuine.	Prosecutions.	Convictions.	Cases Dismissed.	Cases Withdrawn.	
New Milk	927	45	972	887	85	37	27	9	1	In 15 cases no proceedings were taken, these consisting of informal samples, "appeal to cow" samples, etc., and in the remaining 33 (of the 85 not genuine) the vendors were cautioned by order of the Sanitary Committee.
Margarine	7	45	52	52	...	...	...	...	...	All contained boric acid within the limit allowed.
Butter... ..	...	1	1	1	...	...	...	...	...	
Coffee... ..	...	1	1	1	...	...	...	...	...	
Cocoa... ..	...	1	1	1	...	...	...	...	...	
Tea	...	1	1	1	...	...	...	...	...	
Sugar	1	2	3	3	...	...	...	...	...	
Flour	...	1	1	1	...	...	...	...	...	
Self-raising Flour	...	...	...	...	...	...	...	...	...	
Bun Flour, Bun Powder, Cake Flour, etc....	...	9	9	9	...	...	...	...	...	
Egg Powder, Egg Substitutes, etc.	...	11	11	11	...	...	...	...	...	
Baking Powder	...	17	17	17	...	...	...	...	...	
Ground Ginger	...	5	5	5	...	...	...	...	...	
Pepper	...	19	19	19	...	...	...	...	...	
Mustard	...	14	14	14	...	...	...	...	...	
Vinegar	2	8	10	5	5	2	2	...	...	The 5 samples "not genuine" (3 of which were taken informally and 2 formally, from the same vendors) were deficient in acetic acid, in amounts ranging from 17.5% to 37.5%. The 2 vendors were summoned and fined 10/- each.
Custard Powders, etc.	...	23	23	23	...	...	...	...	...	
Corn Flour	...	11	11	11	...	...	...	...	...	
Semolina	...	6	6	6	...	...	...	...	...	
Rice	...	1	1	1	...	...	...	...	...	
Ground Rice	...	21	21	21	...	...	...	...	...	
Jams	...	2	2	2	...	...	...	...	...	
Arrowroot	...	1	1	1	...	...	...	...	...	
Sago	...	1	1	1	...	...	...	...	...	
Ice Cream Powder	...	1	1	1	...	...	...	...	...	
"Fruit Pudding"	...	1	1	1	...	...	...	...	...	
Cream of Tartar	...	11	11	11	...	...	...	...	...	
Tartaric Acid	...	9	9	9	...	...	...	...	...	
Gregory's Powder	...	4	4	4	...	...	...	...	...	
Sweet Spirits of Nitric	2	8	10	6	4	2	2	...	...	The 4 samples, "not genuine" (2 of which were taken informally and 2 formally, from the same vendors) were deficient in ethyl nitrite, varying from 14% to 53%. The 2 vendors were summoned and fined £1 each.
Tincture of Rhubarb	...	7	7	7	...	...	...	...	...	
Camphorated Oil	...	1	1	1	...	...	...	...	...	
Olive Oil	...	4	4	4	...	...	...	...	...	
Paregoric	...	7	7	7	...	...	...	...	...	
White Precipitate Ointment	1	1	2	...	2	1	...	1	...	The 2 samples "not genuine" (one of which was taken informally and the other formally, from the same vendor) consisted entirely of zinc ointment. The vendor was summoned, and the case dismissed.
Liquorice Powder	...	11	11	11	...	...	...	...	...	
Borax	...	12	12	12	...	...	...	...	...	7 of the 12 samples of Borax contained arsenic compounds. These samples were taken at the request of the Ministry of Health, to whom the results of the analyses were duly reported, the vendors being also communicated with.
TOTALS	940	323	1,263	1,167	96	42	31	10	1	Amount of penalties obtained—£87 0s. 0d.*

*Total penalties, including those in respect of "offences other than adulteration" etc. (£3 See separate table, page 131.) £90.

Included in the above are—

30 "Appeal to Cow" samples taken at farm or byre, after seeing the cows milked; 22 of these proved to be genuine and 8 deficient.
145 samples taken "in course of delivery" (mostly at railway stations).
1 sample submitted by private person.

Preservatives in Food.—Of the total number of samples taken for analysis (1,263), only the Margarine (52) were certified to contain any preservative; this consisted of boric acid in quantity below the maximal limit of 0·5 per cent.

Action taken with respect to Offences other than Adulteration.

Offence.	No. of Cases.	Proceedings taken, etc.
<i>Sale of Food and Drugs Act, 1899, Sec. 9:—</i> Selling milk from cans and vehicles upon which the name and address of the vendor were not inscribed.	2	In 1 instance the offender was summoned, and fined 10/-, the other case being met by a caution.
<i>Margarine Act, 1887, Sec. 6.</i> Margarine delivered to purchaser in paper not properly marked "Margarine," and bulk exposed for sale not labelled.	7	In 4 instances the offenders were summoned and fined 10/- each; in the remaining cases the vendors were cautioned.
Margarine delivered to purchaser in paper not properly marked "Margarine."	2	In 1 instance the offender was summoned and fined 10/-, the other case being met by a caution.
Total ...	11	Amount of Penalties, £3 0s.

See also * on page 130A.

The Public Health (Milk and Cream) Regulations, 1912 and 1917.

MINISTRY OF HEALTH TABLE.

1.—Milk and Cream not sold as Preserved Cream.

	(a) Number of samples examined for the presence of a preservative.	(b) Number in which a preservative was reported to be present.
Milk ...	505	None.
Cream ...	—	—

2.—Cream sold as Preserved Cream. No samples.

BACTERIAL IMPURITY OF MILK AND WATER.

Milk.—174 samples were obtained and examined by the Bacteriologist for presence of tubercle bacilli, which were found in 11, or 6·3 per cent.

Action taken is described on page 123.

174 samples were obtained and submitted for examination for presence of evidence of excremental pollution, which was found to an undesirable degree in 94, or 54·0 per cent. The vendors and producers were communicated with and warned, further samples being taken in each case. 106 of these samples were also examined chemically for actual sedimental content. In 10 (or 9·4 per cent.) of these, the amount of “dirt” was certified by the Public Analyst to be in excess of the limit (2 parts of moist sediment per 100,000 of milk) which should be yielded by “clean” milk. In most instances the vendors were cautioned by order of the Sanitary Committee.

In March, a circular letter on the subject was issued by the Medical Officer of Health to milk producers and other dealers, pointing out the necessity for the observance of strict cleanliness at every stage of the production and sale of milk.

Water.—184 samples were collected from all parts of the City and at the water works, and examined for the presence of *bacillus coli*.

The results are described on page 119.

CONDITION OF PREMISES ON WHICH FOOD IS PREPARED.

Bakehouses.—The number of bakehouses in the City is 247, comprising 25 factories, 119 workshops, and 103 domestic bakehouses.

Factory bakehouses are under the jurisdiction of H.M. Inspector of Factories.

The workshop bakehouses, which are under the supervision of the Health Department, are systematically inspected, and, generally speaking, are found to be maintained in a fairly

satisfactory sanitary state. Special attention is given to the matters of general cleanliness and limewashing twice a year as required by law.

The "domestic" bakehouses are usually maintained in as good condition as circumstances will permit, but from the nature of such places (where the baking is frequently done in the kitchen or living room of a tenement holding or small self-contained house) they are not desirable for the baking of bread for sale, and it is the practice of the Inspector to discourage the use of these places as far as possible. Under a local Act, no article of food is allowed to be stored or prepared for sale in any room which is used as a sleeping apartment,—a useful provision in dealing with this class of bakehouse.

Restaurant Kitchens.—Throughout the City there are 109 kitchens of restaurants, cafes, dining rooms, etc., and these are visited from time to time, with special regard to limewashing of walls and ceilings, general cleanliness, and other sanitary requirements.

Fried Fish Shops.—The number of these shops on the register at the end of 1920 was 119, as compared with 116 in the previous year. The improvement previously reported, in the conditions under which these places are conducted, has been generally maintained, due largely to the facilities for closer supervision since the business was scheduled as an "offensive trade." As a rule, these shops are found to be conducted satisfactorily, and with no more "nuisance" than the smell characteristic of such places, and little or no complaint has been received concerning them.

Ice Creameries (including Retail Shops).—The number of these places shews an increase of 21 during the year, viz: from 106 to 127. It is the endeavour to raise the standard of places dealing in this commodity, and it must be said that the general sanitary conditions are much in advance of what formerly obtained. At the same time, there is still room for

improvement in many instances, and, wherever possible, efforts are made to have the processes of manufacture carried on in premises (or portions of premises) to be used solely for that purpose, and where there is some chance of avoiding the danger of contamination or pollution to which this commodity is especially liable.

General Shops from which Milk is sold.—There were 299 such shops on the register at the end of the year (an increase of 24 on the previous year). In the inspection of these places special attention is given to the covering of milk vessels and storage generally under proper conditions. In many of the small “general” shops, however, it is practically impossible, even with the greatest care, to adequately safeguard the purity of the milk, owing to the shops being cramped and congested by other goods, and generally ill adapted for the purpose. Although during recent years many of the most objectionable places have been eliminated, as previously stated, the Inspector considers that, until the sale of this most important article of food can be restricted to shops dealing in dairy produce only, the conditions will never be entirely satisfactory.

(Signed) W. M. HUDSPETH,

Inspector under the Sale of Food and Drugs Act. &c.

REPORT OF THE
INSPECTOR OF NUISANCES.

V. THE HOME AND THE
WORKSHOP.

NUISANCES, HOUSING, FACTORIES AND
WORKSHOPS, &c.

**NUISANCES, HOUSING,
FACTORIES AND WORKSHOPS,
ETC.**

*The following is the
Report of the Inspector of Nuisances.*

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I beg to present to you my thirteenth report upon the work done in my Section of the Health Department, viz., that for the year ended 31st December, 1920, which, together with the section on Food and Drugs Adulteration, etc., is as follows :—

NUISANCE ABATEMENT.

The abnormal conditions resulting from the War continue to constitute a serious problem. Even if the position generally has become somewhat more stabilised than in the previous year, sanitary progress is still a matter of considerable difficulty to the Inspector, who, in seeking to secure improved conditions, finds himself constantly “up against” the argument of high prices and increased costs. Speaking generally, it is the experience that property is not so well maintained as in pre-War days, due to the arrears which

accrued during the War, coupled with the enhanced cost of labour and materials, which as yet shews little diminution. This adds considerably to the work of the Inspecting Staff in following up works ordered, added to which is the large number of instances in which, in normal times, requisite repairs would have been carried out by owners without the intervention of the Inspector.

The shortage of housing accommodation is one of the most urgent associated with Public Health administration, and is a difficulty continually confronting the Inspector. The number of houses built so far has had no appreciable effect upon the general question of overcrowding, and it is feared that the houses already built and in contemplation are of such a class as to be beyond the means of the very poor. In the Inspector's opinion, it is desirable that accommodation should also be made available for this section of the community in particular, amongst whom overcrowding and congested conditions are most acute.

Under The Increase of Rent and Mortgage Interest (Restrictions) Act, 1920, applications have been received from tenants, and certificates issued where houses have been found to be "not in all respects reasonably fit for human habitation, or otherwise not in a reasonable state of repair."

The provisions of the Act in this respect have not, however, been taken advantage of to any great extent, only 19 formal applications having been received up to the close of the year under report.

Certificates were granted in 11 instances, and, in the remaining cases, this was obviated by repairs being already in hand and subsequently completed.

The following are the numbers of notices and letters issued during the year :—

Total number of notices served—				Informal	7,258
				Statutory	352
					— 7,610
Number of letters sent	...	...	...	...	2,815
Number of circular letters sent	...	...	...	...	1,450
Total				...	<u>11,875</u>

Magisterial Proceedings.—As shewn in appended table, in only 13 cases (10 of privy “ conversion ” and 3 of tenement limewashing) was it found necessary to resort to legal proceedings in order to enforce the abatement of nuisances, etc. In other instances the work required was carried out without having to apply to the magistrates.

SANITARY INSPECTION OF THEATRES, MUSIC HALLS, Etc.

With reference to the circular letter addressed to Local Authorities by the Ministry of Health (dated 25th August, 1920), and in accordance with the instructions of the Sanitary Committee, the Theatres, Music Halls, and Cinemas in the City were inspected and a detailed report thereon submitted to the Sanitary Committee and to the Licensing Authorities. An extract from the report was also forwarded to the Management of the Theatres concerned.

REMOVAL OF PRIVIES, &c.

36 pail-closets, 24 "cell" privies (in Walker and Benwell) and 35 "dry" ashpits have been removed during the year. In this connection, 62 free dustbins have been supplied.

RETURN OF "DRY" CLOSETS IN THE VARIOUS WARDS OF THE CITY.

WARDS.	Total No. Privies.	Pail Closets.	Cell Privies.	Privies and Ashpits.	
				Privies.	Ashpits.
Fenham	69	12	24	33	24
Benwell	146	...	143	3	2
Arthur's Hill	...	...	...	...	...
Elswick	66	66	...	...	...
Westgate	11	11	...	...	...
Armstrong	7	7	...	...	...
Stephenson	16	16	...	...	...
St. John's	59	59	...	...	...
St. Thomas'	24	24	...	...	...
St. Andrew's	55	55	...	...	...
St. Nicholas'	7	7	...	...	...
Jesmond	5	...	...	5	5
All Saints'	176	174	...	2	1
Heaton	36	29	...	7	7
Dene	1	...	...	1	1
Byker	919	918	...	1	1
St. Lawrence	1,612	1,609	...	3	3
St. Anthony's	599	581	...	18	17
Walker	1,019	...	970	49	33
Total in City	4,827	3,568	1,137	122	94

ATMOSPHERIC POLLUTION.

Smoke Inspections.—The following are particulars as to smoke observations made :—

No. of chimneys watched.	No. of observations made.	No. of chimneys from which black smoke issued in such quantity as to be a nuisance for periods of over 5 minutes in the aggregate during one hour.	No. of times when smoke issued so as to be a nuisance.	No. of notices served for the abatement of smoke nuisances.		No. of Prosecu- tions.
				Informal.	Statutory	
90	700	17	34	27	1	...

Atmospheric Pollution Records.—An observation station, under the immediate control of the City Analyst, is placed on an open site in Davison's yard, City Road, in connection with similar stations in other towns, the monthly results from all of which are compared and published by the National Committee for the Investigation of Atmospheric Pollution.

The monthly readings from the Newcastle station are appended :—

ATMOSPHERIC POLLUTION.—NEWCASTLE RECORDS, 1920.

MONTH.	RAINFALL. (Millimetres.)	METRIC TONS OF DEPOSIT PER SQUARE KILOMETRE PER MONTH.								
		Insoluble Matter.			Soluble Matter.		TOTAL SOLIDS.	Included in Soluble Matter.		
		Tar.	Other Carbonaceous.	Ash.	Loss on Ignition.	Ash.		Sulphate as SO ₃	Chlorine Cl.	Ammonia NH ₃
January ...	67	0·19	2·27	3·54	1·23	2·70	9·93	1·64	0·48	0·14
February ...	23	0·51	3·19	6·98	1·31	2·38	14·37	1·31	0·33	0·07
March ...	70	0·47	4·18	8·22	2·80	3·08	18·75	2·25	0·40	0·11
April ...	75	0·14	2·65	5·54	2·56	2·41	13·30	1·70	0·67	0·15
May ...	74	0·29	7·80	19·25	1·77	4·29	33·40	1·90	0·94	0·18
June ...	18	0·27	4·45	9·72	1·60	2·32	18·36	0·75	0·73	0·05
July ...	79	0·50	2·82	6·14	1·58	3·01	14·05	1·17	0·76	0·16
August ...	47	0·23	4·32	6·44	0·75	2·43	14·17	0·74	0·56	0·08
September ...	37	0·30	3·22	7·33	1·40	2·95	15·20	1·39	0·44	0·11
October ...	36	0·43	4·44	12·30	3·12	4·36	24·65	2·41	0·52	0·09
November ...	22	0·42	2·95	5·39	0·88	2·74	12·38	1·15	0·45	0·05
December ...	92	0·28	4·51	5·27	1·84	6·45	18·35	2·12	0·98	0·28
TOTAL, 12 months	640	4·03	46·80	96·12	20·84	39·12	206·91	18·53	7·26	1·47
Average per month	54	0·34	3·90	8·1	1·74	3·26	17·24	1·54	0·60	0·12

An average of 17·24 metric tons of total solids per square kilometre per month is equivalent to 16·6 *cwts. per acre per annum*; or 529 tons per square mile.

OFFENSIVE TRADES.

The following are the numbers and classes of offensive trades carried on within the City :—

Specified in Section 112, Public Health Act, 1875 Blood Boiler (0), Bone Boilers (4), Fellmonger (0), Soap Boilers (2), Tallow Melter (0), Tripe Boilers, (7).

Declared by Local Authority, confirmed by Local Government Board (in accordance with Section 51, Public Health Acts Amendment Act, 1907). Rag and Bone Dealers (25), Dealers in Hides and Skins (4), Dealer in blood or other putrescible animal products (1), Blood Dryer (0), Fat Melter or Fat Extractor (3), Glue and Size Makers (3), Gut Scrapers (2), Fish Friers (119).

As compared with the previous year, this is a decrease of 1 tripe boiler and 1 rag and bone dealer, and an increase of 3 fish friers.

The trades in question have, as usual, been kept under close observation, and, as a rule, found to be conducted satisfactorily from a sanitary point of view.

SUMMARY OF NUISANCES, ETC., FOR THE ABATEMENT OF WHICH NOTICES WERE SERVED DURING 1920.

Foul privies and ashpits (to replace with water-closets)	6
Defective "cell" privies in Walker and Benwell (to replace with water-closets)	78
Foul or defective ashpits not connected with privies (to remove and provide dust bins)	44
Insufficient water-closet or privy accommodation (additional water-closets ordered)	
Defective or insufficient dust bins (to provide new or additional) ...	921
Defective water-closets (to repair)	1,179
Defective waste-water closets (to replace with fresh-water closets) ...	1
Water-closets without water supply (to provide water)	228
Choked water-closets (to cleanse—mostly served on tenants) ...	165
Dirty water-closets (to cleanse—all served on tenants)	159
Defective pail-closets (to repair, provide new pails, etc.)	485
Foul pail-closets (to replace with water-closets)	147
Carried forward	3,421

SUMMARY OF NUISANCES, ETC., FOR THE ABATEMENT OF WHICH NOTICES
WERE SERVED DURING 1920.—*Continued.*

Brought forward	...	...	...	...	3,421
Dirty privies (to cleanse—all served on tenants)	...	...	...	...	12
Defective drains (to repair, or construct new drains)	...	...	...	...	237
Choked drains, etc. (to cleanse)	...	...	...	...	962
Defective or choked sinks, waste pipes, etc. (to repair or cleanse)	...	...	...	...	418
Defective or choked soil-pipes, vent shafts, etc. (to repair or cleanse)	...	...	...	...	30
Sink waste-pipes not trapped,	...	...	...	...	28
Want of or defective pavement in yards and passages (to provide or repair)	...	...	...	...	217
Dirty rooms (to be cleansed)	...	...	...	...	69
Damp rooms	...	...	...	...	168
Overcrowding (to abate)	...	...	...	...	40
Dirty yards, passages, stairs, etc. (to cleanse)	...	...	...	...	352
Animals, pigeons, and fowls improperly kept	...	...	...	...	79
Offensive accumulations (to remove)	...	...	...	...	145
Accumulations of manure (to periodically remove)	...	...	...	...	30
Want of or defective manure pits (to provide or repair)	...	...	...	...	8
Broken roofs and want of or defective or choked spouting (to repair, provide, or cleanse)...	...	...	...	...	1,379
Want of water (to provide supply)	...	...	...	...	228
Smoke nuisances (to abate)	...	...	...	...	28
Want of proper ventilation to rooms (including to floor space), broken window cords in tenements, etc.	...	...	...	...	361
Defects in { Defective w.c's	...	...	...	...	9
Council { Defective urinal	...	...	...	...	1
Schools { Defective yard pavements	...	...	...	...	5
Structural defects in houses (broken plaster, floors, stairs, etc.)	...	...	...	...	1,256
Dirty cisterns supplying water to sinks, etc.	...	...	...	...	2
Slop water or excreta thrown into privy pails, ash-tubs or dustbins...	...	...	...	...	5
Filth thrown on yards, streets, etc.	...	...	...	...	15
Stable (defective and unsuitable)	...	...	...	...	1
Piggery (defective and unsuitable)	...	...	...	...	1
Food manufactured or stored for sale under improper conditions	...	...	...	...	7
Bakehouses—Dirty, &c.	...	...	...	...	41
Bedding in dirty condition (to cleanse)	...	...	...	...	5
Urinals dirty (in public-houses, etc.)	...	...	...	...	10
Ice-Creameries (unsuitable, dirty, etc.)	...	...	...	...	2
Fried fish shops (premises dirty, etc.)	...	...	...	...	2
Cellar dwellings illegally occupied	...	...	...	...	8
Unclassified minor nuisances (to abate)	...	...	...	...	70
Total	...	...	...	...	9,652

DETAILS RELATING TO CERTAIN WORKS CARRIED OUT IN THE ABATEMENT OF
NUISANCES AND TO INSPECTIONS MADE DURING 1920.

Length (in yards) of old drains removed	995
" " new drains constructed	1,761
New trapped gullies provided to drains	216
"Cell" privies removed (in Walker and Benwell)	24
Pail-closets removed	36
Defective water-closets removed	22
Water-closets provided (in place of the foregoing privies and defective water-closets removed, also in 6 cases where the accom- modation was previously insufficient)	83
Dry ashpits removed and replaced by galvanized iron dustbins ...	35
Dustbins substituted for dry ash-pits where water-closets existed, and provided in cases where privies have been replaced by water-closets	†62
No. of drains tested	561
No. of tests of above drains made by smoke and water	699
No. of inspections from complaints made at office (verbally or by letter)	2,296
No. of tenement inspections made	14,421
No. of contraventions of Tenement Bye-laws for which notices have been served to obtain remedy	§1,551
Inspections of houses made from complaints received outdoors or nuisances discovered in the districts, including a large number of minor nuisances, such as choked drains and dirty yards, the abatement of which was accomplished at the time of visit, and without legal notice	4,548
Inspections to learn if works ordered were in progress	12,529
Supervisions of work in progress	1,381
Common yards and courts in the worst localities specially visited on Friday afternoons and Saturday mornings to obtain weekly cleansing of same	25,454
Inspections after infectious disease	1,510
Inspections of milk shops and ice creameries (including retail shops)	862
" bakehouses	†940
" offensive trades	553
" wholesale margarine warehouses	34
" as to limewashing of tenements	5,084
" of schools	148
" under Housing, Town Planning, &c., Acts	2,007
Miscellaneous Visits	1,767

† Free dust bins given by Corporation in each case.

§ In addition to this number, the District Inspectors have daily had premises cleansed on verbal order.

† Including 442 inspections made under the Factory and Workshop Acts by the Assistant Inspectors of Workshops.

SUMMARY OF LEGAL PROCEEDINGS ORDERED TO BE TAKEN BEFORE THE
MAGISTRATES FOR THE ABATEMENT OF NUISANCES, ETC.,
DURING THE YEAR 1920.

Nature of Complaint.	No. of Cases.	How disposed of.
<i>Public Health Acts :—</i>		
Choked drains	4	Drains cleared without the summonses being applied for.
Defective gully	1	Gully repaired without the summons being applied for.
Defective spouting, causing dampness	3	Spouting repaired or renewed without the summonses being applied for.
Defective brickwork of walls, causing dampness	2	Brickwork repaired without the summonses being applied for.
Scullery sink wastepipes defective	3	Wastepipes repaired without the summonses being applied for.
Scullery sink woodwork rotted and foul	2	Woodwork renewed without the summonses being applied for.
Scullery roof defective	1	Roof repaired without the summons being applied for.
Manure not removed from stable within prescribed period.	1	Manure removed without the summons being applied for.
<i>Public Health Act, 1875, Sec. 36, and Newcastle-upon-Tyne Improvement Act, 1892, Sec. 53 :—</i>		
Houses without sufficient water closets. (Defective W.Cs. to be repaired, furnished with adequate water supply, etc).	7	Conveniences put in order without the summonses being applied for.
Foul pail closets (to be replaced by water closets).	18	In 6 instances summonses were issued, and Magistrates' Orders obtained, the work being subsequently done. In the remaining 12 cases, the work was carried out without the summonses being applied for.
Foul "Cell" privies (to be replaced by water closets).	13	In 4 instances, summonses were issued and the work subsequently carried out, the summonses being withdrawn on payment of costs. In the remaining 9 cases the work was done without the summonses being applied for.
<i>Carried forward ...</i>	55	

SUMMARY OF LEGAL PROCEEDINGS ORDERED TO BE TAKEN BEFORE THE
MAGISTRATES FOR THE ABATEMENT OF NUISANCES, ETC.,
DURING THE YEAR 1920.—(Continued).

Nature of Complaint.	No. of Cases.	How disposed of.
<i>Brought forward</i>	55	
<i>Public Health Acts Amendment Act, 1890, Sec. 22 :—</i>		
Workshops not provided with sufficient and suitable sanitary accommodation for the use of persons employed.	4	The premises were brought into conformity with the law without the summonses being applied for.
<i>Newcastle-upon-Tyne Corporation Act, 1911, Sec. 55 :—</i>		
Want of proper dustbins for storage of house refuse	13	Dustbins provided without the summonses being applied for.
<i>Tenement Bye-laws :—</i>		
Contravention of Bye-law No. 16. (W.C. structure, apparatus, etc.)	1	W.Cs. repaired without the summons being applied for.
Contravention of Bye-law No. 31. (Limewashing of yards, passages, staircases, etc).	28	In 25 instances, the work was done without the summonses being applied for. In the remaining 3 cases the limewashing was carried out subsequently to issue of summonses, which were accordingly withdrawn, defendants being ordered to pay the Court costs.
TOTAL	101	

HOUSING.

That the problem of finding houses is by no means less acute than in previous years is shown by the following return :—

CITY ENGINEER'S CENSUS OF UNOCCUPIED HOUSES.

Class of House.	Nov. 1912.	Aug. 1914.	Nov. 1917.	Nov. 1918.	Nov. 1919.	Nov. 1920.
Self-contained	306	137	40	29	43	39
Flats (each Flat counted as a separate dwelling).	903	75	None.	None.	1	4
House and Shop combined	68	29	1	2	None.	...
Tenemented Houses ...	28	3	None.	None.	None.	...
Total	1,305	244	41	31	44	43

Bonuses for possession are offered in every local daily paper, as much as £25 for a four-roomed flat, while £10 is nowadays a quite common inducement.

Effect of Bad Housing.—Reference has already been made to the effect of bad housing and overcrowding upon the public health. It is of interest to summarise some of the points. Speaking generally, the wards with the highest populations per acre have also the highest death rates. The converse does not always hold, as some wards, such as Walker, may have small densely packed areas scattered about among wide stretches of open space or farm land. The rates in these will be relatively high. But where the dwellings are evenly distributed and in good sanitary condition, and the population on area is low, the death rate is also low.

Thus the highest death rate from all causes is in All Saints' Ward (19·3), and the lowest in Dene and Jesmond

Wards, (9·4) and (9·1) respectively, which occupy respectively also the opposite ends of the scale in regard to quality of housing, and density of population (See Table on page 39).

Similarly infantile mortality generally follows the same rule, and the wards with the highest wastage of child life are again the most crowded ones. Thus St. John's Ward had an infantile mortality rate of 148 deaths per 1,000 births, All Saints' 114, Stephenson 124, Benwell 121, St. Anthony's 118, and Walker 117, as compared with rates of 36, 55, and 62 in Dene, Heaton and Fenham Wards respectively.

Over a period of thirteen years, the deaths per 1,000 births in one room, two room, and three room houses have been respectively 156, 129 and 113, and last year were 156, 129 and 113.

In the case of tuberculosis one sees again the influence of congestion and bad houses in the fact that the highest mortality for the year was in St. Nicholas' Ward, (3·99), St. Andrew's (2·35), All Saints' (2·25), St. Lawrence (2·22), and Armstrong (2·12), while the lowest incidence occurred in Jesmond (0·68).

Again, 28 per cent. of the population live in one and two room houses, yet over 37 per cent. of the deaths from consumption were among these.

As will be noticed previously (page 140), closet conversion has again been resumed, though the number dealt with is still greatly below the pre-War figure, due, not to any lessening of the need for this work, but chiefly to the cost of labour, and to the high price of building materials.

The Housing, Town Planning, etc., Acts.

Under these Acts 2,007 visits have been made by the Inspectors during the year, chiefly in connection with the compilation of information for a report by the Medical Officer of Health on "Insanitary Areas."

Houses dealt with under the Newcastle-upon-Tyne Improvement Act, 1882, Section 32.

3, Strawberry Place, closed, 2 tenants displaced.

Houses Demolished, etc.—3 tenemented houses (comprising 7 holdings), have ceased to be used as dwellings, having been converted to business premises.

Houses built during the Year 1920.—The City Engineer reports that there were 21 self-contained houses and 46 tenements built during the year under report.

Tenement Bye-laws.—The number of tenemented houses in the City is 3,501, containing 9,928 holdings, as follows:—

1 Room.	2 Rooms.	3 Rooms.	4 Rooms.	5 Rooms.	Total
3,317	5,428	1,067	113	3	9,928

Customs and Inland Revenue Act, 1890, Sec. 26 (2).—

2 applications under this Act were received but no certificates were granted.

New Buildings and Sanitary Alterations.—37 plans were examined by the Medical Officer of Health before their submission to the Town Improvement and Streets Committee and, where necessary, suggestions forwarded to the City Engineer for his consideration, as compared with 230 during the previous year.

COMMON LODGING HOUSES.

The number of registered common lodging houses in the City at the end of the year was 50, as against 55 at the close of 1919.

At the beginning of 1920, applications were received for the re-registration of 54 houses, in accordance with the requirements of the Newcastle-upon-Tyne Corporation Act, 1911, registration being renewed in each instance up to the end of the year. 4 of these, however, were voluntarily closed as common lodging houses during the year, for conversion to business premises.

The houses continue to be satisfactorily conducted and the requirements of the Bye-laws duly observed by the keepers. The remarks previously made, however, still apply as to the general unsuitability of many of the older houses, particularly in the Quayside area.

Regarding the City as a whole, the accommodation provided by this class of dwelling continues well in excess of the demand.

The following summary shows in detail the accommodation afforded by the common lodging houses in the City :—

Description of Lodgers.	No. of		Accommodation.			
	Houses	Beds.	Married Couples	Single Women	Single Men.	Total.
Married couples and single women ...	3	50	24	38	...	62
Single women and single men	2	72	...	32	40	72
Single men, single women and married couples..	4	197	40	65	118	223
Single women only ...	1	18	...	18	...	18
Single men only	40	1,291	...	...	1,291	1,291
Totals	50	1,628	64	153	1,449	1,666

The total number of lodgers for which the houses were registered was thus 1,666, as against 1,935 at the close of 1919 (a decrease of 269 in the "total accommodation"), due to the removal of the houses already referred to, and to a rearrangement of beds in some of the others. The average number of lodgers per night was 1,481, the highest and lowest numbers on any one night being 1,553 and 1,403 respectively.

REGISTERED COMMON LODGING HOUSES.

SUMMARY OF WORK DONE AND VISITS MADE DURING THE YEAR 1920.

Number of Houses on the register at the end of the year	...	50
Applications for re-registration (Newcastle Corporation Act, 1911, Sec. 63) ; all granted	... ..	54
Houses voluntarily closed	... ..	4
Inspections made in the day-time	... ..	6,602
„ „ night-time	... ..	599
Notices served { <i>re</i> washing of bed clothes 210 „ limewashing of houses 105 }	... ..	315
Contravention of Bye-laws, &c. :—		
Cleaning and ventilation of houses	... ..	7
Bed-clothes not properly "aired" during prescribed hours	... ..	3
Bedding defective	... ..	8
Structural defects in houses	... ..	16
Defective water-closets and drains	... ..	16
Choked drains, water-closets, &c.	... ..	5
W.Cs. without water	... ..	1
Defective roofs and spouting	... ..	9
Want of or defective dustbins	... ..	5
Insufficient ventilation to rooms (broken window cords, &c.)	... ..	4
Statutory limewashing not carried out	... ..	2
Defective sink wastepipe	... ..	1
Overcrowding (by 1 bed in excess of number for which registered)	...	1
Unclassified minor nuisances or defects	... ..	6
Number of Prosecutions	... ..	None
Deaths reported (non-infectious disease)	... ..	3
Cases of infectious disease reported (13 tuberculosis, 1 measles)	...	14

FACTORIES AND WORKSHOPS.

FACTORY AND WORKSHOP ACTS.—There are on the Register 1,215 workshops, besides a large number of domestic workshops, workplaces, laundries, and bakehouses.

Particulars as to the number and nature of the various trades carried on, the number of inspections made, defects found, out-workers, etc., are given in the following Tables.

During the year, 69 lists of outworkers have been received, 28 employers having sent in lists twice, and 13 employers once.

Included in the lists so received, were 7 names and addresses of out-workers employed outside the City, (which were duly forwarded to the respective districts, as required by law), while 4 of the lists were received from firms in other districts employing as out-workers persons resident in Newcastle.

77 notices as to insanitary conditions in factories and workshops have been received from His Majesty's Inspectors of Factories. 37 of these related to factories, and 40 to workshops. The matters referred to were duly investigated and dealt with by service of notice, &c., the results being reported to the Inspectors of Factories as required by the Act.

ADMINISTRATION OF THE FACTORY AND WORKSHOP ACT, 1901,
IN CONNECTION WITH FACTORIES, WORKSHOPS, WORKPLACES AND HOMEWORK,
DURING THE YEAR 1920.

Home Office Tables.

1.—INSPECTION.

INCLUDING INSPECTIONS MADE BY SANITARY INSPECTORS OR
INSPECTORS OF NUISANCES.

PREMISES. (1)	NUMBER OF		
	Inspections. (2)	Written Notices. (3)	Prosecutions. (4)
Factories (Including Factory Laundries.)	251	469	—
Workshops (Including Workshop Laundries.)	6,638		
Workplaces (Other than Outworkers' premises included in Part 3 of this Report.)	650		
Total	7,539	469	—

2.—DEFECTS FOUND.

PARTICULARS. (1)	NUMBER OF DEFECTS.			Number of Prosecu- tions. (5)
	Found. (2)	Remedied. (3)	Referred to H.M. Inspector. (4)	
<i>*Nuisances under the Public Health Acts:—</i>				
Want of cleanliness	293	293	—	—
Want of ventilation	11	11	—	—
Overcrowding	12	12	—	—
Want of drainage of floors	—	—	—	—
Other nuisances	118	118	1	—
†Sanitary accommodation {insufficient	36	37	1	—
{unsuitable or defective	131	131	—	—
{not separate for sexes	19	21	—	—
<i>Offences under the Factory and Work- shop Act:—</i>				
Illegal occupation of underground bakehouse (s. 101)	—	—	—	—
Breach of special sanitary require- ments for bakehouses (ss. 97 to 100) }	66	66	—	—
Other offences (Excluding offences relating to out- work which are included in Part 3 of this Report.)	—	—	2	—
Total	686	689	4	—

* Including those specified in sections 2, 3, 7 and 8, of the Factory and Workshop Act as remediable under the Public Health Acts.

† Sec. 22 of the Public Health Acts Amendment Act, 1890, is in force. The standard fixed by the Sanitary Accommodation Order (No. 89) of 4th February, 1903, is followed as a model.

FACTORY AND WORKSHOP ACTS.—Continued.

3.—HOME WORK.

NATURE OF WORK.	OUTWORKERS' LISTS, SECTION 107.										OUTWORK IN UNWHOLESOME PREMISES, SECTION 108.			OUTWORK IN INFECTED PREMISES, SECTIONS 109, 110.		
	Lists received from Employers.						Notices served on Occupiers as to keeping or sending Lists.		Prosecutions.		Instances.	Notices served.	Prosecutions.	Instances.	Orders made (Section 110.)	Prosecutions (Sections 109, 110.)
	Twice in the Year.			Once in the Year.			(8)	(9)	(10)							
	Outworkers.†		Lists.	Outworkers.												
	Con-tractors (3)	Work-men. (4)		Con-tractors (6)	Work-men. (7)											
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(16)
Wearing Apparel, Making, &c.	56	7	73	12	5	17	16	Nil.	Nil.	13	13	Nil.	† 1	Nil.	Nil.	Nil.
Boxmaking	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...
Total	56	7	73	13	5	18	16	...	...	13	13	...	1	...	...	...

NOTES.—† The figures in columns (2), (3), and (4) are the *total* number of lists (received from employers who sent them both in February and August as required by the Act) and of the entries of names of outworkers in those lists. They are, therefore, double of the number of such employers and (approximately) double of the number of individual outworkers whose names are given, since in the February and August lists of the same employer the same outworker's name is often repeated.

Columns (3), (4), (6), and (7)—Employers seldom state whether their Outworkers are "Contractors" or "Workmen," hence the numbers given above may not be properly divided.

§ In 14 of these cases the lists of outworkers were not received in the month of February or August as required by the Act, but in every case they were subsequently received on the employers being reminded of their default. In the remaining 2 cases (of failing to keep or permit Inspections of lists of outworkers) notice was also given and complied with.

* In each case the Notice was served upon the *Outworker*, and was duly complied with.

† Case immediately removed, and thorough disinfection carried out, no formal order made.

4.—REGISTERED WORKSHOPS.

Workshops on the Register (s. 131) at the end of the year. (1)	Number. (2)
Workshops	1,215
Domestic Workshops	229
Workplaces	268
Laundries	27
Bakehouses	222
Total ...	1,961

5.—OTHER MATTERS.

CLASS. (1)	Number. (2)
Matters notified to H.M. Inspector of Factories:—	
Failure to affix Abstract of the Factory and Workshop Act (sec. 133)	32
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (s. 5). {	
Notified by H.M. Inspectors ...	77
Reports (of action taken) sent to H.M. Inspectors ...	77
Other:—	
Underground Bakehouses (s. 101):—	
Certificates granted during the year	—
In use at the end of the year	9

6.—TRADES.

Particulars as to the number and nature of the various trades carried on in the workshops of the City.

TRADES.	Workshops.	Domestic workshops (including domestic bakehouses and laundries).	Workplaces
Ærated Water Manufacturers, Beer bottling, etc.	7	...	9
Artificial Stone, Asphalt, Bitumen Solution, Enamel and Cement making	4	...	...
Athletic Outfitters... ..	3	...	...
Bacon Washing	10	...	4
Bags, Baskets, Trunks, Brushes (making and repairing)	14	3	...
Bakehouses	119	103	...
Bouquets and Wreath making	15	...	...
Bedsteads, Bedding and Mattress making	1	1	6
Boat and Bicycle making and repairing	29	6	...
Blacksmiths and Locksmiths	44	...	...
Carried forward ...	246	113	19

6.—TRADES.—*continued*

TRADES.	Work-shops.	Domestic workshops (including domestic bake-houses and laundries).	Work-places.
<i>Brought forward</i> ...	246	113	19
Boots, Shoes, Slippers (making and repairing)	150	28	—
Carts, Carriages, Coaches, Barrows (making and repairing)... ..	12	—	7
Carpets, Canvas, Water Proof Cover making...	6	—	—
Chemical Works	2	—	—
Confectionery making	9	1	—
Coopers	6	—	—
Cork Cutters	2	—	—
Currants and other Fruit packing and cleaning	4	—	—
Cigarette making and Pipemaking and repairing	3	—	—
Dressmaking, Milliners, and Mantle Makers ...	201	102	—
Drysalters	4	—	—
Engravers	5	—	—
Engineers, Electric Heating and Cooking, etc.	24	—	—
Firewood Cutting and Firelighter Makers ...	4	—	1
Fish Curers	3	—	—
Furniture, Automatic Seats, French Polishing and Upholstery	47	5	—
Grain, Ice, Meat, Onions, Oil, packing and storage	24	—	24
Harness making and repairing	12	—	—
Hide and Skin Dealers	—	—	4
Instruments—Mathematical, Musical, etc. (making and repairing)... ..	6	—	—
Jewellery, Watches, Clocks, (making and repairing)	49	6	—
Joiners, Handrailers, Ladder Makers, and Wood Carvers and Turners	65	6	—
Lamp Making and repairing	1	—	—
Laundries	27	—	—
Marble Masons and Monumental Sculptors ...	9	—	—
Marine Stores	15	—	28
Miscellaneous Warehouses and Workshops, (which include repairing umbrellas and guns, preparing cattle food and medicine, dressing leather, packing eggs, lard rendering and gut scraping)	23	3	31
Painters' Workshops, and making and bottling Paint and Varnish	19	—	—
Photographers	23	3	—
Pickle and Sauce making	6	—	—
Picture Framers and Gilders	11	—	—
Plasterers, Lath rendering	3	—	—
Plumbers, Gas Fitters and making and repairing Sanitary Pipes and Fittings... ..	62	3	1
Restaurant kitchens	—	—	109
Rubber Stamps and Tyres (making and repairing)	2	—	—
<i>Carried forward</i> ...	1,085	270	224

6.—TRADES—Continued.

TRADES.	Work-shops.	Domestic workshops (including domestic bake-houses and laundries).	Work-places.
<i>Brought forward</i> ...	1,085	270	224
Scales, Weighing Machines and Sewing Machines (making and repairing) ...	8	...	...
Sign Boards, Sun and Venetian Blind (making and repairing) ...	4	...	...
Stained Glass making ...	5	...	...
Stables (Livery, etc.) ...	...	...	33
Tailors ...	191	41	...
Taxidermists, Fur pulling and cleaning ...	6	...	...
Tea Blending and Packing ...	5	...	...
Ticket Writers ...	7	1	...
Timber Yards ...	...	...	11
Tin, Iron Plate and Wire Workers ...	14	1	...
Tripe Dressers ...	6	...	...
Typewriting Machines (repairing) ...	4	...	...
Underclothing (making) ...	26	19	...
Totals ...	1,361	332	268

COUNCIL AND OTHER SCHOOLS.

Sanitary Inspection.—148 inspections of these schools have been made during the year. At 3, certain insanitary conditions were found. (For particulars see page 144.) The matters in question were duly reported to the school authorities, and, in one instance, have since been remedied, the others (of a minor nature) standing over.

THE RAG FLOCK ACT, 1911.

In pursuance of this Act, 12 samples of rag flock have been obtained and submitted for analysis to the Public Analyst. All conformed to the standard of cleanliness prescribed by the Regulations, (containing less than 30 parts of chlorine per 100,000 of flock).

For particulars of work done under the *Food and Drugs Acts*, see pages 130-134.

In conclusion, I desire to acknowledge the co-operation and support of the Staff generally and the efficient manner in which their many and varied duties have been carried out throughout the year.

I am, Sir,

Your obedient Servant,

W. HUDSPETH,

*Inspector of Nuisances,
Common Lodging Houses, &c.*

Health Department,

Town Hall.

September, 1921.

